EXHIBIT A

Any question? -> Use the BRENDA Discussion groups

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Mark a special word or phrase in this record: Mark!

Select one or more organisms in this record: All organisms
Bos taurus
Citrus macrophylla
Cricetulus griseus
Cytomegalovirus
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Show additional data

- (•) Do not include text mining results
- Include *AMENDA* (text mining) results[new!] (more...)
- Include *FRENDA* results[new!] (AMENDA + additional results, but less precise; more...)

Please login to have access to the AMENDA and FRENDA data

EC NUMBER	COMMENTARY
2.4.1.65	-

Pathway	KEGG Link
Glycan structures - biosynthesis 2	01031
Glycosphingolipid biosynthesis - lactoseries	00601
Glycosphingolipid biosynthesis - neo-lactoseries	00602

RECOMMENDED NAME	GeneOntology No.
3-galactosyl-N-acetylglucosaminide 4-alpha-L-fucosyltransferase	-

SYSTEMATIC NAME

GDP-L-fucose:3-beta-D-galactosyl-N-acetyl-D-glucosaminyl-R 4l-alpha-L-fucosyltransferase

SYNONYMS	ORGANISM	COMMENTARY	LITERATURE
(Lea)-dependent alpha-3/4-fucosyltransferase	-	-	-
alpha 1,3/4 fucosyltransferase	Helicobacter pylori	-	662137
alpha(1,3/1,4) fucosyltransferase III	-	-	-
alpha(1,3/4) fucosyltransferase	-	-	-
alpha-(1->4)-L-fucosyltransferase	-	-	-
alpha-1,3-fucosyltransferase	Homo sapiens	-	661803
alpha-1,3fucosyltransferase	Homo sapiens	-	661277
alpha-3-FUT	Gorilla gorilla	-	661839
alpha-3-FUT	Homo sapiens	-	661839
alpha-3/4 fucosyltransferase	Homo sapiens	-	662484
alpha-3/4 fucosyltransferase III	Homo sapiens	-	661313
alpha-3/4 fucosyltransferase III	Mesocricetus auratus	-	661236
alpha-3/4-FUT	Gorilla gorilla	-	661839

alpha-3/4-FUT	Homo sapiens	-	661839
alpha-3/4-FUT	Hylobates lar	-	661839
alpha-3/4-FUT	Pongo pygmaeus	-	661839
alpha-4-fucosyltransferase	Silene alba	-	661845
alpha-4-L-fucosyltransferase	-	-	-
alpha4-fucosyltransferase	-	-	-
alpha4-FucT	-	-	-
beta-acetylglucosaminylsaccharide fucosyltransferase	-	-	-
blood group Lewis alpha-4-fucosyltransferase	-	-	-
blood-group substance Lea-dependent fucosyltransferase	-	-	-
FT3	Homo sapiens	-	662484
FT3	Mesocricetus auratus	-	661236
Fuc-T	Homo sapiens	-	661341
Fuc-TIII	-	-	-
fucosyltransferase	Homo sapiens	-	661433
fucosyltransferase 3	Homo sapiens	-	661839
fucosyltransferase 3	Pongo pygmaeus	-	661839
fucosyltransferase 5	Gorilla gorilla	-	661839
fucosyltransferase 5	Homo sapiens	-	661839
fucosyltransferase 5	Hylobates lar	-	661839
fucosyltransferase 5	Pongo pygmaeus	-	661839
fucosyltransferase 6	Gorilla gorilla	-	661839
fucosyltransferase 6	Homo sapiens	-	661839
fucosyltransferase 7	Homo sapiens	-	660797
fucosyltransferase V	Homo sapiens	-	661341
fucosyltransferase VII	Homo sapiens	-	660797
fucosyltransferase, guanosine diphosphofucose-beta-acetylglucosaminylsaccharide 4-alpha-L-	-	-	-
fucosyltransferase, guanosine diphosphofucose-glycoprotein 4-alpha-	-	-	-
FucT	Helicobacter pylori	-	662137
FucT	Homo sapiens	-	661277, 661803
FucT	Silene alba	-	661845
FucT VII	Homo sapiens	-	660797
FucT-II	-	-	-
FucT-III	Homo sapiens	-	661839
FucT-III	Pongo pygmaeus	-	661839
FucT-V	Gorilla gorilla	-	661839
FucT-V	Homo sapiens	-	661839
FucT-V	Hylobates lar	-	661839

FucT-V	Pongo pygmaeus	-	661839
FucT-VI	Gorilla gorilla	-	661839
FucT-VI	Homo sapiens	-	661839
FucT-VII	Homo sapiens	-	660797
FucTIII	-	-	-
FUT3	-	-	-
guanosine diphosphofucose-glycoprotein 4-alpha-L-fucosyltransferase	-	-	-
Lewis alpha-3-fucosyltransferase	Gorilla gorilla	FUT6 gene	661839
Lewis alpha-3-fucosyltransferase	Homo sapiens	FUT6 gene	661839
Lewis alpha-3/4-fucosyltransferase	-	-	-
Lewis alpha-3/4-fucosyltransferase	Gorilla gorilla	FUT5 gene	661839
Lewis alpha-3/4-fucosyltransferase	Homo sapiens	FUT3 gene; FUT5 gene	661839
Lewis alpha-3/4-fucosyltransferase	Hylobates lar	FUT5 gene	661839
Lewis alpha-3/4-fucosyltransferase	Pongo pygmaeus	FUT3 gene; FUT5 gene	661839
Lewis alpha1-3/4 fucosyltransferase	-	-	-
Lewis blood group alpha1-3/4 fucosyltransferase	-	-	-
Lewis(Le) blood group gene-dependent alpha-3/4-L-fucosyltransferase	-	-	-
More	-	-	-
SFT3	-	-	-
SFT3	Homo sapiens	-	661313
SFT3	Homo sapiens	secretory soluble form of FT3	662484

CAS REGISTRY NUMBER	COMMENTARY
37277-69-3	-

REACTION	COMMENTARY	ORGANISM	LITERATURE
GDP-L-fucose + 1,3-beta-D-galactosyl-N-acetyl-D-glucosaminyl-R = GDP + 1,3-beta-D-galactosyl-(alpha-1,4-L-fucosyl)-N-acetyl-D-glucosaminyl-R	-	-	-

REACTION TYPE	ORGANISM	COMMENTARY	LITERATURE
hexosyl group transfer	-	-	-
hexosyl group transfer	Mesocricetus auratus	-	661236
hexosyl group transfer	Silene alba	-	661845
hexosyl group transfer	Helicobacter pylori	-	662137
hexosyl group transfer	Pongo pygmaeus	-	661839
hexosyl group transfer	Hylobates lar	-	661839

hexosyl group transfer	Homo sapiens	-	661277, 661313, 661341, 661803, 662484, 661433, 661839, 660797
hexosyl group transfer	Gorilla gorilla	-	661839

ORGANISM	COMMENTARY	LITERATURE		SEQUENCE CODE	SOURCE
Bos taurus	-	637650		SwissprorQ11126	BRENDA
Bos taurus	Swiss-Prot		-	Q11126	BRENDA
Gorilla gorilla	-	661839		Q8HYJ6	BRENDA
Gorilla gorilla	-	661839		Q8HYJ7	BRENDA
Gorilla gorilla gorilla	Swiss-Prot		-	Q8HYJ6	BRENDA
Gorilla gorilla gorilla	Swiss-Prot		-	Q8HYJ7	BRENDA
Helicobacter pylori	-	637638		-	BRENDA
Helicobacter pylori	-	662137		Q9L8S4	BRENDA
Homo sapiens	-	637634, 637635, 637636, 637637, 637640, 637641, 637642, 637643, 637644, 637647, 637648, 661313, 661341, 661803, 662484, 637645, 637646, 661277		-	BRENDA
Homo sapiens	-	637651, 637652, 637653, 637654, 637655, 637656, 637657, 637658, 637659, 637660		SwissprotP21217	BRENDA
Homo sapiens	-	660797		Q11130	BRENDA
Homo sapiens	-	661433, 661839		P51993	BRENDA
Homo sapiens	-	661433, 661839		Q11128	BRENDA
Homo sapiens	-	661839		P21217	BRENDA
Homo sapiens	Swiss-Prot		-	P21217	BRENDA
Homo sapiens	Swiss-Prot		-	P51993	BRENDA
Homo sapiens	Swiss-Prot		-	Q11128	BRENDA
Hylobates lar	-	661839		Q8HYJ3	BRENDA
Hylobates lar	Swiss-Prot		-	Q8HYJ3	BRENDA
Macaca mulatta	-	637642		-	BRENDA
Mesocricetus auratus	-	661236		-	BRENDA
Pan troglodytes	-	637649		SwissprotO19058	BRENDA
Pan troglodytes	Swiss-Prot		-	O19058	BRENDA
Pan troglodytes	Swiss-Prot		-	P56433	BRENDA
Pan troglodytes	Swiss-Prot		-	P56434	BRENDA
Physcomitrella patens	TrEMBL		-	Q5TJK3	BRENDA
Pongo pygmaeus	-	661839		Q8HYJ4	BRENDA
Pongo pygmaeus	-	661839		Q8HYJ5	BRENDA
Pongo pygmaeus	Swiss-Prot		-	Q8HYJ4	BRENDA
Pongo pygmaeus	Swiss-Prot		-	Q8HYJ5	BRENDA
Pongo pygmaeus	Swiss-Prot		-	Q9GKU6	BRENDA
Populus tremula x Populus alba	TrEMBL		-	Q599J3	BRENDA
Rattus norvegicus	-	489362		-	BRENDA

Silene alba	-	661845	-	BRENDA
Vaccinium myrtillus	-	637636	-	BRENDA

SUBSTRATE	PRODUCT	REACTION DIAGRAM	ORGANISM	COMMENTARY/ Substrate r:=reversible ir:=irreversible	LITERATURE/ Substrate	COMME Product
GDP-fucose + 2-O-MeGal-beta-1,3GlcNAc	GDP + 2-O-MeGal-beta-1,4(Fuc-alpha-1,4) GlcNAc		Homo sapiens	17.6% activity	661433	-
GDP-fucose + 2-O-MeGal-beta-1,3GlcNAc	GDP + 2-O-MeGal-beta-1,4(Fuc-alpha-1,4) GlcNAc		Homo sapiens	19.4% activity	661433	-
GDP-fucose + 2-O-MeGal-beta-1,4GlcNAc	GDP + 2-O-MeGal-beta-1,4(Fuc-alpha-1,3) GlcNAc		Homo sapiens	100% activity	661433	-
GDP-fucose + Fetuin triantennary asialo agalacto glycoprotein	GDP + ?		Homo sapiens	42.9% activity	661433	-
GDP-fucose + Fetuin triantennary asialo agalacto glycoprotein	GDP + ?		Homo sapiens	5.2% activity	661433	-
GDP-fucose + Fetuin triantennary asialo glycoprotein	GDP + ?		Homo sapiens	36.9% activity	661433	-
GDP-fucose + Fetuin triantennary asialo glycoprotein	GDP + ?		Homo sapiens	73.8% activity	661433	-
GDP-fucose + Fuc-alpha-1,2Gal-beta-1,3GlcNAc-O-C6H5	GDP + Fuc-alpha-1,2Gal-beta-1,3(Fuc-alpha-1,4)GlcNAc-O-C6H5		Silene alba	H-type 1 reaction	661845	-
GDP-fucose + Fuc-alpha-1,2Gal-beta-1,3GlcNAc-sp-biotin	GDP + Fuc-alpha-1,2Gal-beta-1,3(Fuc-alpha-1,4)GlcNAc-sp-biotin		Gorilla gorilla	type 1 reaction	661839	-
GDP-fucose + Fuc-alpha-1,2Gal-beta-1,3GlcNAc-sp-biotin	GDP + Fuc-alpha-1,2Gal-beta-1,3(Fuc-alpha-1,4)GlcNAc-sp-biotin		Homo sapiens	type 1 reaction	661839	-
GDP-fucose + Fuc-alpha-1,2Gal-beta-1,3GlcNAc-sp-biotin	GDP + Fuc-alpha-1,2Gal-beta-1,3(Fuc-alpha-1,4)GlcNAc-sp-biotin		Hylobates lar	type 1 reaction	661839	-
GDP-fucose + Fuc-alpha-1,2Gal-beta-1,3GlcNAc-sp-biotin	GDP + Fuc-alpha-1,2Gal-beta-1,3(Fuc-alpha-1,4)GlcNAc-sp-biotin		Pongo pygmaeus	type 1 reaction	661839	-
GDP-fucose + Fuc-alpha-1,2Gal-	GDP + Fuc-alpha-1,2Gal-beta-1,3(Fuc-		Silene alba	H-type 2 reaction, hardly any activity	661845	-

beta-1,4GlcNAc-O-C6H5	alpha-1,3)GlcNAc-O-C6H5					
GDP-fucose + Fuc-alpha-1,2Gal-beta-1,4GlcNAc-sp-biotin	GDP + Fuc-alpha-1,2Gal-beta-1,4(Fuc-alpha-1,3)GlcNAc-sp-biotin		Gorilla gorilla	type 2 reaction	661839	-
GDP-fucose + Fuc-alpha-1,2Gal-beta-1,4GlcNAc-sp-biotin	GDP + Fuc-alpha-1,2Gal-beta-1,4(Fuc-alpha-1,3)GlcNAc-sp-biotin		Homo sapiens	type 2 reaction	661839	-
GDP-fucose + Fuc-alpha-1,2Gal-beta-1,4GlcNAc-sp-biotin	GDP + Fuc-alpha-1,2Gal-beta-1,4(Fuc-alpha-1,3)GlcNAc-sp-biotin		Hylobates lar	type 2 reaction	661839	-
GDP-fucose + Fuc-alpha-1,2Gal-beta-1,4GlcNAc-sp-biotin	GDP + Fuc-alpha-1,2Gal-beta-1,4(Fuc-alpha-1,3)GlcNAc-sp-biotin		Pongo pygmaeus	type 2 reaction	661839	-
GDP-fucose + Gal-beta-1,3-GlcNAc-O-(CH2)8CO2CH3	GDP + Gal-beta-1,3 [alpha-fucosyl(1,4)]-GLCNAc-O-(CH2)8CO2CH3		Helicobacter pylori	type 1 reaction, chimeric FucT 11639 (347CNDAHYSALH)	662137	-
GDP-fucose + Gal-beta-1,3-GlcNAc-O-(CH2)8CO2CH3	GDP + Gal-beta-1,3 [alpha-fucosyl(1,4)]-GLCNAc-O-(CH2)8CO2CH3		Helicobacter pylori	type 1 reaction, chimeric FucT UA948 (1-360)11639(360-478)	662137	-
GDP-fucose + Gal-beta-1,3-GlcNAc-O-(CH2)8CO2CH3	GDP + Gal-beta-1,3 [alpha-fucosyl(1,4)]-GLCNAc-O-(CH2)8CO2CH3		Helicobacter pylori	type 1 reaction, chimeric FucT UA948 (345DNPFIFC)	662137	-
GDP-fucose + Gal-beta-1,3-GlcNAc-O-(CH2)8CO2CH3	GDP + Gal-beta-1,3 [alpha-fucosyl(1,4)]-GLCNAc-O-(CH2)8CO2CH3		Helicobacter pylori	type 1 reaction, strain UA948	662137	-
GDP-fucose + Gal-beta-1,3GlcNAc	GDP + Gal-beta-1,3 (Fuc-alpha-1,4)GlcNAc		Homo sapiens	-	661277	-
GDP-fucose + Gal-beta-1,3GlcNAc-beta-1,3Gal-beta-1,4Glc	GDP + Gal-beta-1,3 (Fuc-alpha-1,4)GlcNAc-beta-1,3Gal-beta-1,4Glc		Homo sapiens	-	661277	-
GDP-fucose + Gal-beta-1,3GlcNAc-beta-O-(CH2)7CH3	GDP + Gal-beta-1,3 (Fuc-alpha-1,4)GlcNAc-beta-O-(CH2)7CH3		Silene alba	type 1 reaction	661845	-
GDP-Fucose + Gal-beta-1,3GlcNAc-O(CH2)3NHCO(CH2)5NH-biotin	GDP + Gal-beta-1,3 [alpha-L-fucosyl-(1,4)] GlcNAcO(CH2)3NHCO(CH2)5NH-biotin		Mesocricetus auratus	-	661236	-
GDP-fucose + Gal-beta-1,3GlcNAc-O-(CH2)3NHCO(CH2)5NH-biotin	GDP + Gal-beta-1,3 (Fuc-alpha-1,4)GlcNAc-O-(CH2)3NHCO(CH2)5NH-biotin		Homo sapiens	-	662484	-
GDP-fucose + Gal-beta-1,3GlcNAcO(CH2)3NHCO	GDP + Gal-beta-1,3 [alpha-L-fucosyl-(1,4)] GlcNAcO(CH2)3NHCO(CH2)5NH-biotin		Homo sapiens	-	661313	-

(CH2)5NH-biotin						
GDP-fucose + Gal-beta-1,4-GlcNAc-O-(CH2)8CO2CH3	GDP + Gal-beta-1,4 [alpha-fucosyl(1,3)]-GLCNAc-O-(CH2)8CO2CH3		Helicobacter pylori	type 2 reaction, chimeric FucT 11639(1-359)UA948(361-462)	662137	-
GDP-fucose + Gal-beta-1,4-GlcNAc-O-(CH2)8CO2CH3	GDP + Gal-beta-1,4 [alpha-fucosyl(1,3)]-GLCNAc-O-(CH2)8CO2CH3		Helicobacter pylori	type 2 reaction, chimeric FucT 11639 (347CNDAHYSALH)	662137	-
GDP-fucose + Gal-beta-1,4-GlcNAc-O-(CH2)8CO2CH3	GDP + Gal-beta-1,4 [alpha-fucosyl(1,3)]-GLCNAc-O-(CH2)8CO2CH3		Helicobacter pylori	type 2 reaction, chimeric FucT UA948 (1-360)11639(360-478)	662137	-
GDP-fucose + Gal-beta-1,4-GlcNAc-O-(CH2)8CO2CH3	GDP + Gal-beta-1,4 [alpha-fucosyl(1,3)]-GLCNAc-O-(CH2)8CO2CH3		Helicobacter pylori	type 2 reaction, chimeric FucT UA948 (345DNPFIFC)	662137	-
GDP-fucose + Gal-beta-1,4-GlcNAc-O-(CH2)8CO2CH3	GDP + Gal-beta-1,4 [alpha-fucosyl(1,3)]-GLCNAc-O-(CH2)8CO2CH3		Helicobacter pylori	type 2 reaction, strain NCTC116639	662137	-
GDP-fucose + Gal-beta-1,4-GlcNAc-O-(CH2)8CO2CH3	GDP + Gal-beta-1,4 [alpha-fucosyl(1,3)]-GLCNAc-O-(CH2)8CO2CH3		Helicobacter pylori	type 2 reaction, strain UA948	662137	-
GDP-fucose + Gal-beta-1,4GlcNAc	GDP + Gal-beta-1,4 (Fuc-alpha-1,3)GlcNAc		Homo sapiens	-	661277	-
GDP-fucose + Gal-beta-1,4GlcNAc	GDP + Gal-beta-1,4 (Fuc-alpha-1,3)GlcNAc + Gal-beta-1,4(Fuc-alpha-1,2)GlcNAc		Homo sapiens	enzyme activity is divided into 66% alpha-1,3FucT and 34% alpha-1,2FucT	661277	-
GDP-fucose + Gal-beta-1,4GlcNAc-beta-1-R	GDP + Gal-beta-1,4 (fuc-alpha-1,3)GlcNAc-beta-1-R		Homo sapiens	-	661341	-
GDP-fucose + Gal-beta-1,4GlcNAc-beta-O-(CH2)7CH3	GDP + Gal-beta-1,3 (Fuc-alpha-1,3)GlcNAc-beta-O-(CH2)7CH3		Silene alba	type 2 reaction, hardly any activity	661845	-
GDP-fucose + GalNAc-beta-1,4GlcNAc-beta-O-Bn	GDP + GalNAc-beta-1,4 (Fuc-alpha-1,3)GlcNAc-beta-O-Bn		Homo sapiens	91.9% activity	661433	-
GDP-fucose + GalNAc-beta-1,4GlcNAc-beta-O-Bn	GDP + GalNAc-beta-1,4 (Fuc-alpha-1,3)GlcNAc-beta-O-Bn		Homo sapiens	95.0% activity	661433	-
GDP-fucose + GlcNAc-beta-1,4GlcNAc-beta-1,4GlcNAc	?		Homo sapiens	acivity not determined	661433	-
GDP-fucose + GlcNAc-beta-1,4GlcNAc-beta-1,4GlcNAc	GDP + ?		Homo sapiens	63.8% acivity	661433	-
GDP-fucose + GlcNAc-beta-1,4GlcNAc-beta-1,4GlcNAc-beta-	?		Homo sapiens	acivity not determined	661433	-

1,4GlcNAc						
GDP-fucose + GlcNAc-beta-1,4GlcNAc-beta-1,4GlcNAc-beta-1,4GlcNAc	GDP + ?		Homo sapiens	61.5% acivity	661433	-
GDP-fucose + GlcNAc-beta-1,4GlcNAc-beta-O-Bn	GDP + GlcNAc-beta-1,4 (Fuc-alpha-1,3)GlcNAc-beta-O-Bn		Homo sapiens	11.3% activity	661433	-
GDP-fucose + GlcNAc-beta-1,4GlcNAc-beta-O-Bn	GDP + GlcNAc-beta-1,4 (Fuc-alpha-1,3)GlcNAc-beta-O-Bn		Homo sapiens	89.1% activity	661433	-
GDP-fucose + LacNAc	?		Homo sapiens	-	661803	-
GDP-L-fucose + 1,3-beta-D-galactosyl-N-acetyl-D-glucosaminyl-R	GDP + 1,3-beta-D-galactosyl-(alpha-(1,4)-L-fucosyl)-N-acetyl-D-glucosaminyl-R		Helicobacter pylori	inactivation of the enzyme eliminates expression of all Lewis antigens	637638	-
GDP-L-fucose + 1,3-beta-D-galactosyl-N-acetyl-D-glucosaminyl-R	GDP + 1,3-beta-D-galactosyl-(alpha-(1,4)-L-fucosyl)-N-acetyl-D-glucosaminyl-R		Homo sapiens	the enzyme catalyzes the synthesis of fucosylated Lewis motifs that are associated with cell-adhesion events and are differentially expressed during cell differentiation	637637	-
GDP-L-fucose + 1,3-beta-D-galactosyl-N-acetyl-D-glucosaminyl-R	GDP + 1,3-beta-D-galactosyl-(alpha-(1,4)-L-fucosyl)-N-acetyl-D-glucosaminyl-R		Homo sapiens	the enzyme may catalyze alpha1-3 and alpha-1,4 glycosidic linkages involved in the expression of VIM-2, Lewis A, Lewis B, sialyl Lewis X and Lewis X/SSEA-1 antigens. May be involved in blood group Lewis determination. Lewis-positive individuals have an active enzyme while Lewis-negative individuals have an inactive enzyme	637651	-
GDP-L-fucose + 1,3-beta-D-galactosyl-N-acetyl-D-glucosaminyl-R	GDP + 1,3-beta-D-galactosyl-(alpha-(1,4)-L-fucosyl)-N-acetyl-D-glucosaminyl-R		Homo sapiens	the enzyme may catalyze alpha1-3 and alpha-1,4 glycosidic linkages involved in the expression of VIM-2, Lewis A, Lewis B, sialyl Lewis X and Lewis X/SSEA-1 antigens. May be involved in blood group Lewis determination. Lewis-positive individuals have an active enzyme while Lewis-negative individuals have an inactive enzyme	637652	-

GDP-L-fucose + 1,3-beta-D-galactosyl-N-acetyl-D-glucosaminyl-R	GDP + 1,3-beta-D-galactosyl-(alpha-(1,4)-L-fucosyl)-N-acetyl-D-glucosaminyl-R	Homo sapiens	the enzyme may catalyze alpha1-3 and alpha-1,4 glycosidic linkages involved in the expression of VIM-2, Lewis A, Lewis B, sialyl Lewis X and Lewis X/SSEA-1 antigens. May be involved in blood group Lewis determination. Lewis-positive individuals have an active enzyme while Lewis-negative individuals have an inactive enzyme	637653	-
GDP-L-fucose + 1,3-beta-D-galactosyl-N-acetyl-D-glucosaminyl-R	GDP + 1,3-beta-D-galactosyl-(alpha-(1,4)-L-fucosyl)-N-acetyl-D-glucosaminyl-R	Homo sapiens	the enzyme may catalyze alpha1-3 and alpha-1,4 glycosidic linkages involved in the expression of VIM-2, Lewis A, Lewis B, sialyl Lewis X and Lewis X/SSEA-1 antigens. May be involved in blood group Lewis determination. Lewis-positive individuals have an active enzyme while Lewis-negative individuals have an inactive enzyme	637654	-
GDP-L-fucose + 1,3-beta-D-galactosyl-N-acetyl-D-glucosaminyl-R	GDP + 1,3-beta-D-galactosyl-(alpha-(1,4)-L-fucosyl)-N-acetyl-D-glucosaminyl-R	Homo sapiens	the enzyme may catalyze alpha1-3 and alpha-1,4 glycosidic linkages involved in the expression of VIM-2, Lewis A, Lewis B, sialyl Lewis X and Lewis X/SSEA-1 antigens. May be involved in blood group Lewis determination. Lewis-positive individuals have an active enzyme while Lewis-negative individuals have an inactive enzyme	637655	-
GDP-L-fucose + 1,3-beta-D-galactosyl-N-acetyl-D-glucosaminyl-R	GDP + 1,3-beta-D-galactosyl-(alpha-(1,4)-L-fucosyl)-N-acetyl-D-glucosaminyl-R	Homo sapiens	the enzyme may catalyze alpha1-3 and alpha-1,4 glycosidic linkages involved in the expression of VIM-2, Lewis A, Lewis B, sialyl Lewis X and Lewis X/SSEA-1 antigens. May be involved in blood group Lewis determination. Lewis-positive individuals have an active enzyme while Lewis-negative individuals have an inactive enzyme	637656	-
GDP-L-fucose +	GDP + 1,3-beta-D-	Homo	the enzyme may	637657	-

1,3-beta-D-galactosyl-N-acetyl-D-glucosaminyl-R	galactosyl-(alpha-(1,4)-L-fucosyl)-N-acetyl-D-glucosaminyl-R		sapiens	catalyze alpha1-3 and alpha-1,4 glycosidic linkages involved in the expression of VIM-2, Lewis A, Lewis B, sialyl Lewis X and Lewis X/SSEA-1 antigens. May be involved in blood group Lewis determination. Lewis-positive individuals have an active enzyme while Lewis-negative individuals have an inactive enzyme		
GDP-L-fucose + 1,3-beta-D-galactosyl-N-acetyl-D-glucosaminyl-R	GDP + 1,3-beta-D-galactosyl-(alpha-(1,4)-L-fucosyl)-N-acetyl-D-glucosaminyl-R		Homo sapiens	the enzyme may catalyze alpha1-3 and alpha-1,4 glycosidic linkages involved in the expression of VIM-2, Lewis A, Lewis B, sialyl Lewis X and Lewis X/SSEA-1 antigens. May be involved in blood group Lewis determination. Lewis-positive individuals have an active enzyme while Lewis-negative individuals have an inactive enzyme	637658	-
GDP-L-fucose + 1,3-beta-D-galactosyl-N-acetyl-D-glucosaminyl-R	GDP + 1,3-beta-D-galactosyl-(alpha-(1,4)-L-fucosyl)-N-acetyl-D-glucosaminyl-R		Homo sapiens	the enzyme may catalyze alpha1-3 and alpha-1,4 glycosidic linkages involved in the expression of VIM-2, Lewis A, Lewis B, sialyl Lewis X and Lewis X/SSEA-1 antigens. May be involved in blood group Lewis determination. Lewis-positive individuals have an active enzyme while Lewis-negative individuals have an inactive enzyme	637659	-
GDP-L-fucose + 1,3-beta-D-galactosyl-N-acetyl-D-glucosaminyl-R	GDP + 1,3-beta-D-galactosyl-(alpha-(1,4)-L-fucosyl)-N-acetyl-D-glucosaminyl-R		Homo sapiens	the enzyme may catalyze alpha1-3 and alpha-1,4 glycosidic linkages involved in the expression of VIM-2, Lewis A, Lewis B, sialyl Lewis X and Lewis X/SSEA-1 antigens. May be involved in blood group Lewis determination. Lewis-positive individuals have an active enzyme while Lewis-negative individuals have an inactive enzyme	637660	-
GDP-L-fucose + 1,3-beta-D-	GDP + 1,3-beta-D-galactosyl-(alpha-(1,4)-		Pan troglodytes	the enzyme may catalyze alpha-1,3 and	637649	-

galactosyl-N-acetyl-D-glucosaminyl-R	L-fucosyl)-N-acetyl-D-glucosaminyl-R			alpha-1,4 glycosidic linkages involved in expression of sialyl Lewis X and Lewis X/SSEA-1 antigens. It may be involved in blood group Lewis determination		
GDP-L-fucose + 1,3-beta-D-galactosyl-N-acetyl-D-glucosaminyl-R	GDP + 1,3-beta-D-galactosyl-(alpha-1,4-L-fucosyl)-N-acetyl-D-glucosaminyl-R		Helicobacter pylori	the enzyme appears to add fucose with a greater than 5fold preference for type II chains but still retains significant activity using type I acceptors. The addition of fucose to type II acceptors does not appear to be affected by fucosylation at other sites on the carbohydrate acceptor	637638	-
GDP-L-fucose + 1,3-beta-D-galactosyl-N-acetyl-D-glucosaminyl-R	GDP + 1,3-beta-D-galactosyl-(alpha-1,4-L-fucosyl)-N-acetyl-D-glucosaminyl-R		Homo sapiens	-	637636	-
GDP-L-fucose + 1,3-beta-D-galactosyl-N-acetyl-D-glucosaminyl-R	GDP + 1,3-beta-D-galactosyl-(alpha-1,4-L-fucosyl)-N-acetyl-D-glucosaminyl-R		Homo sapiens	the enzyme has a clear preference for the Galbeta3GlcNAc motif in oligosaccharides conjugated with the hydrophobic tail (CH2)3-NHCO-(CH2)5-NH-biotin	637637	-
GDP-L-fucose + 1,3-beta-D-galactosyl-N-acetyl-D-glucosaminyl-R	GDP + 1,3-beta-D-galactosyl-(alpha-1,4-L-fucosyl)-N-acetyl-D-glucosaminyl-R		Vaccinium myrtillus	transfer of fucose to N-acetylglucosamine in the type I Galbeta3GlcNAc motif from oligosaccharides linked to a hydrophobic tail and glycoproteins containing the type I motif. Sialylated oligosaccharides containing the type II Galbeta4GlcNAc motif are not acceptors	637636	-
GDP-L-fucose + 2'-fucosyllactose	GDP + ?		Homo sapiens	-	637634	-
GDP-L-fucose + 2'-fucosyllactose	GDP + ?		Homo sapiens	11% of the activity with Fucalpha(1,2)Galbeta(1,3)GlcNAcbeta(1,3)Galbeta(1,4)Glc	637635	-
GDP-L-fucose + 2'-fucosyllactose	GDP + ?		Homo sapiens	254% of the activity with Galbeta(1,4)GlcNAc	637644	-
GDP-L-fucose + 2-O-MeGalbeta(1,3)GlcNAcbeta-O-Bn	GDP + 2-O-MeGalbeta(1,3)(Fucalpha(1,4))GlcNAcbeta-O-Bn		Homo sapiens	-	637647	-
GDP-L-fucose + 3-O-MeGalbeta	GDP + 3-O-MeGalbeta(1,4)(Fucalpha(1,3))		Homo sapiens	16.3% of the activity with 2-O-MeGalbeta	637647	-

(1,4)GlcNAcbeta (1,6)(Galbeta (1,3)) GalNAcalpha-O-Bn	GlcNAcbeta(1,6) (Galbeta(1,3)) GalNAcalpha-O-Bn			(1,3)GlcNAcbeta-O-Bn, enzyme form FTA. 17.8% of the activity with 2-O-MeGalbeta (1,3)GlcNAcbeta-O-Bn, enzyme form FTB		
GDP-L-fucose + 3-O-sulfoGalbeta (1,3)GlcNAcbeta (1,3)Galbeta-O-Al	GDP + 3-O-sulfoGalbeta(1,3) (Fucalpha(1,4)) GlcNAcbeta(1,3) Galbeta-O-Al			Homo sapiens	64.3% of the activity with 2-O-MeGalbeta (1,3)GlcNAcbeta-O-Bn, enzyme form FTA. 82.2% of the activity with 2-O-MeGalbeta (1,3)GlcNAcbeta-O-Bn, enzyme form FTB	637647	-
GDP-L-fucose + 3-O-sulfoGalbeta (1,3)GlcNAcbeta-O-Al	GDP + 3-O-sulfoGalbeta(1,3) (Fucalpha(1,4)) GlcNAcbeta-O-Al			Homo sapiens	64.3% of the activity with 2-O-MeGalbeta (1,3)GlcNAcbeta-O-Bn, enzyme form FTA. 62.9% of the activity with 2-O-MeGalbeta (1,3)GlcNAcbeta-O-Bn, enzyme form FTB	637647	-
GDP-L-fucose + 3-O-sulfoGalbeta (1,4)GlcNAcbeta (1,6)(Galbeta (1,3)) GalNAcalpha-O-Bn	GDP + 3-O-sulfoGalbeta(1,4) (Fucalpha(1,3)) GlcNAcbeta(1,6) (Galbeta(1,3)) GalNAcalpha-O-Bn			Homo sapiens	10.9% of the activity with 2-O-MeGalbeta (1,3)GlcNAcbeta-O-Bn, enzyme form FTA. 14.0% of the activity with 2-O-MeGalbeta (1,3)GlcNAcbeta-O-Bn, enzyme form FTB	637647	-
GDP-L-fucose + 6-O-sulfoGalbeta (1,3)GlcNAcbeta-O-Al	GDP + 6-O-sulfoGalbeta(1,3) (Fucalpha(1,4)) GlcNAcbeta-O-Al			Homo sapiens	3.1% of the activity with 2-O-MeGalbeta(1,3) GlcNAcbeta-O-Bn, enzyme form FTA. 3.5% of the activity with 2-O-MeGalbeta(1,3) GlcNAcbeta-O-Bn, enzyme form FTB	637647	-
GDP-L-fucose + alpha(2,3)-sialyllactosamine	GDP + ?			Homo sapiens	56% of the activity with Galbeta(1,4)GlcNAc	637644	-
GDP-L-fucose + alpha-(2,3)-sialylated Galbeta(1,3) GlcNAc	GDP + ?			Rattus norvegicus	-	489362	-
GDP-L-fucose + ancrod	GDP + ?			Homo sapiens	-	637647	-
GDP-L-fucose + asialo ancrod	GDP + ?			Homo sapiens	-	637647	-
GDP-L-fucose + asialofetuin	GDP + ?			Homo sapiens	-	637636	-
GDP-L-fucose + asialofetuin	GDP + ?			Homo sapiens	no activity	637637	-
GDP-L-fucose + asialofetuin	GDP + ?			Homo sapiens	the acceptor oligosaccharide in bovine asialofetuin is the man3 branched triantennary isomer with one Galbeta(1,3)	637648	-

				GlcNAc		
GDP-L-fucose + asialofetuin	GDP + ?		Vaccinium myrtillus	7.3% of the activity with Galbeta3GlcNAc-O-sp-biotin	637636	-
GDP-L-fucose + fetuin triantennary glycopeptide	GDP + ?		Homo sapiens	-	637647	-
GDP-L-fucose + Fucalpha(1,2) Galbeta(1,3) GlcNAc	GDP + Fucalpha(1,2) Galbeta(1,3)(Fucalpha (1,4))GlcNAc		Homo sapiens	activity of the wild-type enzyme is about 3% of the activity with Fucalpha(1,2)Galbeta (1,4)GlcNAc. The mutation W111R shows higher activity for Fucalpha(1,2)Galbeta (1,3)GlcNAc than for Fucalpha(1,2)Galbeta (1,4)GlcNAc. The addition mutation in W11R/D112E increases activity for Fucalpha(1,2)Galbeta (1,3)GlcNAc compared to mutant W111R	637646	-
GDP-L-fucose + Fucalpha(1,2) Galbeta(1,3) GlcNAc-(CH2)3-NHCO-(CH2)5-NH-biotin	GDP + ?		Homo sapiens	-	637643	-
GDP-L-fucose + Fucalpha(1,2) Galbeta(1,3) GlcNAc-(CH2)5-NH-biotin	GDP + Fucalpha(1,2) Galbeta(1,3)(Fucalpha (1,4))GlcNAc-(CH2)5-NH-biotin		Homo sapiens	193% of the activity with Galbeta(1,3) GlcNAc-(CH2)3-NHCO-(CH2)5-NH-biotin	637637	-
GDP-L-fucose + Fucalpha(1,2) Galbeta(1,3) GlcNAc-O-sp-biotin	GDP + Fucalpha(1,2) Galbeta(1,3)(Fucalpha (1,4))GlcNAc-O-sp-biotin		Vaccinium myrtillus	118% of the activity with Galbeta3GlcNAc-O-sp-biotin	637636	-
GDP-L-fucose + Fucalpha(1,2) Galbeta(1,3) GlcNAc-R	GDP + Fucalpha(1,2) Galbeta(1,3)(Fucalpha (1,4))GlcNAc-R		Homo sapiens	-	637642	-
GDP-L-fucose + Fucalpha(1,2) Galbeta(1,3) GlcNAc-R	GDP + Fucalpha(1,2) Galbeta(1,3)(Fucalpha (1,4))GlcNAc-R		Macaca mulatta	-	637642	-
GDP-L-fucose + Fucalpha(1,2) Galbeta(1,3) GlcNAcbeta(1,3) Galbeta(1,4)Glc	GDP + Fucalpha(1,2) Galbeta(1,3)(Fucalpha (1,4))GlcNAcbeta(1,3) Galbeta(1,4)Glc		Homo sapiens	i.e. lacto-N-fucopentaose I	637635	-
GDP-L-fucose + Fucalpha(1,2) Galbeta(1,4)Glc	GDP + Fucalpha(1,2) Galbeta(1,4)(Fucalpha (1,3))Glc		Homo sapiens	34.9% of the activity with 2-O-MeGalbeta (1,3)GlcNAcbeta-O-Bn, enzyme form FTA. 38.7% of the activity with 2-O-MeGalbeta (1,3)GlcNAcbeta-O-Bn, enzyme form FTB	637647	-

GDP-L-fucose + Fucalpha(1,2) Galbeta(1,4) GlcNAc	GDP + Fucalpha(1,2) Galbeta(1,4)(Fucalpha (1,3))GlcNAc		Homo sapiens	-	637646	-
GDP-L-fucose + Fucalpha(1,2) Galbeta(1,4) GlcNAc	GDP + Fucalpha(1,2) Galbeta(1,4)(Fucalpha (1,3))GlcNAc		Homo sapiens	mutant enzyme D336A shows 40fold reduction in activity for Fucalpha (1,2)Galbeta(1,3) GlcNAc	637645	-
GDP-L-fucose + Fucalpha(1,2) Galbeta(1,4) GlcNAc-(CH2)3-NHCO-(CH2)5-NH-biotin	GDP + Fucalpha(1,2) Galbeta(1,4)(Fucalpha (1,3))GlcNAc-(CH2)3-NHCO-(CH2)5-NH-biotin		Homo sapiens	3% of the activity with with Galbeta(1,3) GlcNAc-(CH2)3-NHCO-(CH2)5-NH-biotin, enzyme expressed in Sf9 cells	637643	-
GDP-L-fucose + Fucalpha(1,2) Galbeta(1,4) GlcNAc-(CH2)5-NH-biotin	GDP + Fucalpha(1,2) Galbeta(1,4)(Fucalpha (1,3))GlcNAc-(CH2)5-NH-biotin		Homo sapiens	9.3% of the activity with Galbeta(1,3)GlcNAc-(CH2)3-NHCO-(CH2)5-NH-biotin	637637	-
GDP-L-fucose + Fucalpha(1,2) Galbeta(1,4) GlcNAc-O-sp-biotin	GDP + Fucalpha(1,2) Galbeta(1,4)(Fucalpha (1,3))GlcNAc-O-sp-biotin		Vaccinium myrtillus	10.5% of the activity with Galbeta3GlcNAc-O-sp-biotin	637636	-
GDP-L-fucose + Galalpha(1,3) Galbeta(1,3) GlcNAc-R	GDP + Galalpha(1,3) Galbeta(1,3)(Fucalpha (1,4))GlcNAc-R		Homo sapiens	-	637642	-
GDP-L-fucose + Galalpha(1,3) Galbeta(1,3) GlcNAc-R	GDP + Galalpha(1,3) Galbeta(1,3)(Fucalpha (1,4))GlcNAc-R		Macaca mulatta	-	637642	-
GDP-L-fucose + Galalpha(1,3) Galbeta(1,3) GlcNAcbeta-O-Naph	GDP + Galalpha(1,3) Galbeta(1,3)(Fucalpha (1,4))GlcNAcbeta-O-Naph		Homo sapiens	42.6 of the activity with 2-O-MeGalbeta(1,3) GlcNAcbeta-O-Bn, enzyme form FTA. 46.0% of the activity with 2-O-MeGalbeta (1,3)GlcNAcbeta-O-Bn, enzyme form FTB	637647	-
GDP-L-fucose + Galbeta(1,3)(6-O-sulfo)GlcNAcbeta (1,3)Galbeta-O-Al	GDP + ?		Homo sapiens	15.5% of the activity with 2-O-MeGalbeta (1,3)GlcNAcbeta-O-Bn, enzyme form FTA. 19.4% of the activity with 2-O-MeGalbeta (1,3)GlcNAcbeta-O-Bn, enzyme form FTB	637647	-
GDP-L-fucose + Galbeta(1,3) GlcNAc	GDP + Galbeta(1,3) (Fucalpha(1,4))GlcNAc		Homo sapiens	-	637640	-
GDP-L-fucose + Galbeta(1,3) GlcNAc	GDP + Galbeta(1,3) (Fucalpha(1,4))GlcNAc		Homo sapiens	-	637645	-
GDP-L-fucose + Galbeta(1,3) GlcNAc	GDP + Galbeta(1,3) (Fucalpha(1,4))GlcNAc		Homo sapiens	130% of the activity with Galbeta(1,4) GlcNAc	637634	-
GDP-L-fucose + Galbeta(1,3) GlcNAc	GDP + Galbeta(1,3) (Fucalpha(1,4))GlcNAc		Homo sapiens	29% of the activity with Fucalpha(1,2)Galbeta (1,3)GlcNAcbeta(1,3)	637635	-

				Galbeta(1,4)Glc		
GDP-L-fucose + Galbeta(1,3) GlcNAc	GDP + Galbeta(1,3) (Fucalpha(1,4))GlcNAc		Homo sapiens	420% of the activity with Galbeta(1,4) GlcNAc	637644	-
GDP-L-fucose + Galbeta(1,3) GlcNAc	GDP + Galbeta(1,3) (Fucalpha(1,4))GlcNAc		Homo sapiens	45.0% of the activity with 2-O-MeGalbeta (1,3)GlcNAcbeta-O-Bn, enzyme form FTA. 51% of the activity with 2-O-MeGalbeta(1,3) GlcNAcbeta-O-Bn, enzyme form FTB	637647	-
GDP-L-fucose + Galbeta(1,3) GlcNAc-(CH2)3-NHCO-(CH2)5-NH-biotin	GDP + Galbeta(1,3) (Fucalpha(1,4))GlcNAc-(CH2)3-NHCO-(CH2)5-NH-biotin		Homo sapiens	-	637637	-
GDP-L-fucose + Galbeta(1,3) GlcNAc-(CH2)3-NHCO-(CH2)5-NH-biotin	GDP + Galbeta(1,3) (Fucalpha(1,4))GlcNAc-(CH2)3-NHCO-(CH2)5-NH-biotin		Homo sapiens	-	637643	-
GDP-L-fucose + Galbeta(1,3) GlcNAc-O-sp-biotin	GDP + Galbeta(1,3) (Fucalpha(1,4))GlcNAc-O-sp-biotin		Vaccinium myrtillus	-	637636	-
GDP-L-fucose + Galbeta(1,3) GlcNAc-R	GDP + Galbeta(1,3) (Fucalpha(1,4))GlcNAc-R		Homo sapiens	-	637642	-
GDP-L-fucose + Galbeta(1,3) GlcNAc-R	GDP + Galbeta(1,3) (Fucalpha(1,4))GlcNAc-R		Macaca mulatta	-	637642	-
GDP-L-fucose + Galbeta(1,3) GlcNAcbeta(1,3) Galbeta(1,4)Glc	GDP + Galbeta(1,3) (Fucalpha(1,4)) GlcNAcbeta(1,3) Galbeta(1,4)Glc		Homo sapiens	20% of the activity with Fucalpha(1,2)Galbeta (1,3)GlcNAcbeta(1,3) Galbeta(1,4)Glc	637635	-
GDP-L-fucose + Galbeta(1,3) GlcNAcbeta-O-Bn	GDP + Galbeta(1,3) (Fucalpha(1,4)) GlcNAcbeta-O-Bn		Homo sapiens	79.1% of the activity with 2-O-MeGalbeta (1,3)GlcNAcbeta-O-Bn, enzyme form FTA. 83.8% of the activity with 2-O-MeGalbeta (1,3)GlcNAcbeta-O-Bn, enzyme form FTB	637647	-
GDP-L-fucose + Galbeta(1,4)-(5-thioGlc)	GDP + ?		Homo sapiens	51% of the activity with Galbeta(1,4)GlcNAc	637634	-
GDP-L-fucose + Galbeta(1,4)Glc	GDP + Galbeta(1,4) (Fucalpha(1,3))Glc		Homo sapiens	-	637634	-
GDP-L-fucose + Galbeta(1,4)Glc	GDP + Galbeta(1,4) (Fucalpha(1,3))Glc		Homo sapiens	145% of the activity with Galbeta(1,4) GlcNAc	637644	-
GDP-L-fucose + Galbeta(1,4)Glc	GDP + Galbeta(1,4) (Fucalpha(1,3))Glc		Homo sapiens	i.e. lactose, 2% of the activity with Fucalpha (1,2)Galbeta(1,3) GlcNAcbeta(1,3) Galbeta(1,4)Glc	637635	-
GDP-L-fucose + Galbeta(1,4)	GDP + Galbeta(1,4) (Fucalpha(1,3))GlcNAc		Homo sapiens	3.9% of the activity with 2-O-MeGalbeta(1,3)	637647	-

GlcNAc					GlcNAcbeta-O-Bn, enzyme form FTA. 3.5% of the activity with 2-O-MeGalbeta(1,3) GlcNAcbeta-O-Bn, enzyme form FTB	
GDP-L-fucose + Galbeta(1,4) GlcNAc	GDP + Galbeta(1,4) (Fucalpha(1,3))GlcNAc		Homo sapiens		43% of the activity with Fucalpha(1,2)Galbeta (1,3)GlcNAcbeta(1,3) Galbeta(1,4)Glc	637635	-
GDP-L-fucose + Galbeta(1,4) GlcNAc	GDP + Galbeta(1,4) (Fucalpha(1,3))GlcNAc		Homo sapiens		i.e. N-acetyllactosamine	637640	-
GDP-L-fucose + Galbeta(1,4) GlcNAc-(CH2)3-NHCO-(CH2)5-NH-biotin	GDP + Galbeta(1,4) (Fucalpha(1,3))GlcNAc-(CH2)3-NHCO-(CH2)5-NH-biotin		Homo sapiens		2% of the activity with Galbeta(1,3)GlcNAc-(CH2)3-NHCO-(CH2)5-NH-biotin, enzyme expressed in Sf9 cells	637643	-
GDP-L-fucose + Galbeta(1,4) GlcNAcbeta(1,2) Man	GDP + Galbeta(1,4) (Fucalpha(1,3)) GlcNAcbeta(1,2)Man		Homo sapiens		28% of the activity with Fucalpha(1,2)Galbeta (1,3)GlcNAcbeta(1,3) Galbeta(1,4)Glc	637635	-
GDP-L-fucose + Galbeta(1,4) GlcNAcbeta(1,3) Galbeta(1,4)Glc	GDP + Galbeta(1,4) (Fucalpha(1,3)) GlcNAcbeta(1,3) Galbeta(1,4)Glc		Homo sapiens		33% of the activity with Fucalpha(1,2)Galbeta (1,3)GlcNAcbeta(1,3) Galbeta(1,4)Glc	637635	-
GDP-L-fucose + Galbeta(1,4) GlcNAcbeta(1,6) (3-O-MeGalbeta (1,3)) GalNAcalpha-O-Bn	GDP + Galbeta(1,4) (Fucalpha(1,3)) GlcNAcbeta(1,6)(3-O-MeGalbeta(1,3)) GalNAcalpha-O-Bn		Homo sapiens		2.3% of the activity with 2-O-MeGalbeta(1,3) GlcNAcbeta-O-Bn, enzyme form FTA. 1.9% of the activity with 2-O-MeGalbeta(1,3) GlcNAcbeta-O-Bn, enzyme form FTB	637647	-
GDP-L-fucose + Galbeta(1,4) GlcNAcbeta(1,6) (3-O-sulfoGalbeta (1,3))-GalNAcalpha-O-Bn	GDP + Galbeta(1,4) (Fucalpha(1,3)) GlcNAcbeta(1,6)(3-O-sulfoGalbeta(1,3))-GalNAcalpha-O-Bn		Homo sapiens		1.6% of the activity with 2-O-MeGalbeta(1,3) GlcNAcbeta-O-Bn, enzyme form FTA. 1.6% of the activity with 2-O-MeGalbeta(1,3) GlcNAcbeta-O-Bn, enzyme form FTB	637647	-
GDP-L-fucose + Galbeta(1,4) GlcNAcbeta(1,6) (Galbeta(1,3)) GalNAcalpha-O-Bn	GDP + Galbeta(1,4) (Fucalpha(1,3)) GlcNAcbeta(1,6) (Galbeta(1,3)) GalNAcalpha-O-Bn		Homo sapiens		2.3% of the activity with 2-O-MeGalbeta(1,3) GlcNAcbeta-O-Bn, enzyme form FTA. 1.6% of the activity with 2-O-MeGalbeta(1,3) GlcNAcbeta-O-Bn, enzyme form FTB	637647	-
GDP-L-fucose + Galbeta(1,4) GlcNAcbeta-O-Bn	GDP + Galbeta(1,4) (Fucalpha(1,4)) GlcNAcbeta-O-Bn		Homo sapiens		3.1% of the activity with 2-O-MeGalbeta(1,3) GlcNAcbeta-O-Bn, enzyme form FTA. 2.5% of the activity with 2-O-MeGalbeta(1,3) GlcNAcbeta-O-Bn, enzyme form FTB	637647	-
GDP-L-fucose + Galbeta(1,4) GlcNAcbetaOallyl	GDP + Galbeta(1,4) (Fucalpha(1,3)) GlcNAcbetaOallyl		Homo sapiens		64% of the activity with Galbeta(1,4)GlcNAc	637634	-

GDP-L-fucose + Galbeta(1,4) Glucal	GDP + Galbeta(1,4) (Fucalpha(1,3))Glucal		Homo sapiens	10% of the activity with Galbeta(1,4)GlcNAc	637634	-
GDP-L-fucose + Galbeta(1,6) Galbeta(1,4)Glc	GDP + ?		Homo sapiens	-	637635	-
GDP-L-fucose + GalNAcbeta(1,3) (6-O-sulfo) GlcNAcbeta-O-Me	GDP + ?		Homo sapiens	6.2 of the activity with 2-O-MeGalbeta(1,3) GlcNAcbeta-O-Bn, enzyme form FTA. 8.6% of the activity with 2-O-MeGalbeta(1,3) GlcNAcbeta-O-Bn, enzyme form FTB	637647	-
GDP-L-fucose + IL-4 receptor	GDP + ?		Homo sapiens	-	637648	-
GDP-L-fucose + lacto-N-fucopentaose	GDP + ?		Homo sapiens	-	637634	-
GDP-L-fucose + NeuAc(2,3) Galbeta(1,4) Glucal	GDP + NeuAc(2,3) Galbeta(1,4)(Fucalpha (1,3))Glucal		Homo sapiens	330% of the activity with Galbeta(1,4) GlcNAc	637634	-
GDP-L-fucose + NeuAc(2,6) Galbeta(1,4) GlcNAc	GDP + NeuAc(2,6) Galbeta(1,4)(Fucalpha (1,3))GlcNAc		Homo sapiens	13% of the activity with Galbeta(1,4)GlcNAc	637634	-
GDP-L-fucose + NeuAcalpha(2,3) Galbeta(1,3) GlcNAc-(CH2)3-NHCO-(CH2)5-NH-biotin	GDP + NeuAcalpha (2,3)Galbeta(1,3) (Fucalpha(1,4))GlcNAc-(CH2)3-NHCO-(CH2)5-NH-biotin		Homo sapiens	-	637643	-
GDP-L-fucose + NeuAcalpha(2,3) Galbeta(1,3) GlcNAc-(CH2)5-NH-biotin	GDP + NeuAcalpha (2,3)Galbeta(1,3) (Fucalpha(1,4))GlcNAc-(CH2)5-NH-biotin		Homo sapiens	57% of the activity with Galbeta(1,3)GlcNAc-(CH2)3-NHCO-(CH2)5-NH-biotin	637637	-
GDP-L-fucose + NeuAcalpha(2,3) Galbeta(1,3) GlcNAcbeta-O-Bn	GDP + NeuAcalpha (2,3)Galbeta(1,3) (Fucalpha(1,4)) GlcNAcbeta-O-Bn		Homo sapiens	55.8% of the activity with 2-O-MeGalbeta (1,3)GlcNAcbeta-O-Bn, enzyme form FTA. 64.4% of the activity with 2-O-MeGalbeta (1,3)GlcNAcbeta-O-Bn, enzyme form FTB	637647	-
GDP-L-fucose + NeuAcalpha(2,3) Galbeta(1,4) GlcNAc	GDP + NeuAcalpha (2,3)Galbeta(1,4) (Fucalpha(1,3))GlcNAc		Homo sapiens	620% of the activity with Galbeta(1,4) GlcNAc	637634	-
GDP-L-fucose + NeuAcalpha(2,3) Galbeta(1,4) GlcNAc-(CH2)3-NHCO-(CH2)5-NH-biotin	GDP + NeuAcalpha (2,3)Galbeta(1,4) (Fucalpha(1,3))GlcNAc-(CH2)3-NHCO-(CH2)5-NH-biotin		Homo sapiens	-	637643	-
GDP-L-fucose + NeuAcalpha(2,3) Galbeta(1,4) GlcNAcbeta(1,6)	GDP + NeuAcalpha (2,3)Galbeta(1,4) (Fucalpha(1,3)) GlcNAcbeta(1,6)		Homo sapiens	24.2% of the activity with 2-O-MeGalbeta (1,3)GlcNAcbeta-O-Bn, enzyme form FTA.	637647	-

(Galbeta(1,3)) GalNAcalpha-OMe	(Galbeta(1,3)) GalNAcalpha-OMe			12.9% of the activity with 2-O-MeGalbeta (1,3)GlcNAcbeta-O-Bn, enzyme form FTB		
GDP-L-fucose + NeuAcalpha(2,3) Galbeta(1,4) GlcNAcbeta-O-Bn	GDP + NeuAcalpha (2,3)Galbeta(1,4) (Fucalpha(1,3)) GlcNAcbeta-O-Bn		Homo sapiens	6.2% of the activity with 2-O-MeGalbeta(1,3) GlcNAcbeta-O-Bn, enzyme form FTA. 7.6% of the activity with 2-O-MeGalbeta(1,3) GlcNAcbeta-O-Bn, enzyme form FTB	637647	-
GDP-L-fucose + NeuAcalpha(2,3) Galbeta(1,4) GlcNAcbetaOallyl	GDP + NeuAcalpha (2,3)Galbeta(1,4) (Fucalpha(1,3)) GlcNAcbetaOallyl		Homo sapiens	380% of the activity with Galbeta(1,4) GlcNAc	637634	-
More	?		Homo sapiens	11 nonidentical amino acids, found within a hypervariable peptide segment positioned at the NH2 terminus determins whether or not a alpha(1,3)-fucosyltransferase can utilize type I acceptor substrates to form Lewis a and sialyl Lewis a moieties	637640	-
More	?		Homo sapiens	activity with type 2 substrates is 1% or less than the activity with type 1 substrates	637642	-
More	?		Homo sapiens	high substrate affinity for clustered units of 3-sialyl Galbeta(1,3) GlcNAcbeta in asparagine linked carbohydrate as well as for mucin core 2 structure containing 3-sialyl Galbeta1,4GlcNAcbeta-unit, in addition of alpha(1,2)-L-fucosylating activity	637647	-
More	?		Homo sapiens	no activity with Fuc-alpha-1,2Gal-beta-1,3GlcNAc-beta-1,3Gal-beta-1,4Glc, Fuc-alpha-1,2Gal-beta-1,4Glc, and NeuAc-alpha-2,3-Gal-beta-1,4GlcNAc	661277	-
More	?		Homo sapiens	the enzyme transferrs fucose to the O-4-position of GlcNAc in small oligosaccharides, glycolipids, glycopeptides and glycoproteins containing the type I Galbeta(1,3)GlcNAc motif	637648	-

More	?		Macaca mulatta	activity with type 2 substrates is 1% or less than the activity with type 1 substrates	637642		-
pyridylamine-lacto-N-neotetraose + GDP-fucose	GDP + ?		Homo sapiens	-	661803		-

NATURAL SUBSTRATES	NATURAL PRODUCTS	REACTION DIAGRAM	ORGANISM	COMMENTARY SUBSTRATE	LITERATURE (Substrate)	COMMENTARY PRODUCT	LITERATURE (Product)
GDP-fucose + Gal-beta-1,4GlcNAc-beta-1-R	GDP + Gal-beta-1,4(fuc-alpha-1,3) GlcNAc-beta-1-R		Homo sapiens	-	661341	-	-
GDP-L-fucose + 1,3-beta-D-galactosyl-N-acetyl-D-glucosaminyl-R	GDP + 1,3-beta-D-galactosyl-(alpha-(1,4)-L-fucosyl)-N-acetyl-D-glucosaminyl-R		Homo sapiens	the enzyme catalyzes the synthesis of fucosylated Lewis motifs that are associated with cell-adhesion events and are differentially expressed during cell differentiation	637637	-	-
GDP-L-fucose + 1,3-beta-D-galactosyl-N-acetyl-D-glucosaminyl-R	GDP + 1,3-beta-D-galactosyl-(alpha-(1,4)-L-fucosyl)-N-acetyl-D-glucosaminyl-R		Helicobacter pylori	inactivation of the enzyme eliminates expression of all Lewis antigens	637638	-	-
GDP-L-fucose + 1,3-beta-D-galactosyl-N-acetyl-D-glucosaminyl-R	GDP + 1,3-beta-D-galactosyl-(alpha-(1,4)-L-fucosyl)-N-acetyl-D-glucosaminyl-R		Homo sapiens	the enzyme may catalyze alpha1-3 and alpha-1,4 glycosidic linkages involved in the expression of VIM-2, Lewis A, Lewis B, sialyl Lewis X and Lewis X/SSEA-1 antigens. May be involved in blood group Lewis determination. Lewis-positive individuals have an active enzyme while Lewis-negative individuals have an inactive enzyme	637651	-	-
GDP-L-fucose	GDP + 1,3-		Homo	the enzyme	637652	-	-

+ 1,3-beta-D-galactosyl-N-acetyl-D-glucosaminyl-R	beta-D-galactosyl-(alpha-(1,4)-L-fucosyl)-N-acetyl-D-glucosaminyl-R		sapiens	may catalyze alpha1-3 and alpha-1,4 glycosidic linkages involved in the expression of VIM-2, Lewis A, Lewis B, sialyl Lewis X and Lewis X/SSEA-1 antigens. May be involved in blood group Lewis determination. Lewis-positive individuals have an active enzyme while Lewis-negative individuals have an inactive enzyme			
GDP-L-fucose + 1,3-beta-D-galactosyl-N-acetyl-D-glucosaminyl-R	GDP + 1,3-beta-D-galactosyl-(alpha-(1,4)-L-fucosyl)-N-acetyl-D-glucosaminyl-R		Homo sapiens	the enzyme may catalyze alpha1-3 and alpha-1,4 glycosidic linkages involved in the expression of VIM-2, Lewis A, Lewis B, sialyl Lewis X and Lewis X/SSEA-1 antigens. May be involved in blood group Lewis determination. Lewis-positive individuals have an active enzyme while Lewis-negative individuals have an inactive enzyme	637653	-	-
GDP-L-fucose + 1,3-beta-D-galactosyl-N-acetyl-D-glucosaminyl-R	GDP + 1,3-beta-D-galactosyl-(alpha-(1,4)-L-fucosyl)-N-acetyl-D-glucosaminyl-R		Homo sapiens	the enzyme may catalyze alpha1-3 and alpha-1,4 glycosidic linkages involved in the expression of VIM-2, Lewis A, Lewis B, sialyl Lewis X and Lewis X/SSEA-1 antigens. May be involved in blood group Lewis determination.	637654	-	-

				Lewis-positive individuals have an active enzyme while Lewis-negative individuals have an inactive enzyme			
GDP-L-fucose + 1,3-beta-D-galactosyl-N-acetyl-D-glucosaminyl-R	GDP + 1,3-beta-D-galactosyl-(alpha-(1,4)-L-fucosyl)-N-acetyl-D-glucosaminyl-R		Homo sapiens	the enzyme may catalyze alpha1-3 and alpha-1,4 glycosidic linkages involved in the expression of VIM-2, Lewis A, Lewis B, sialyl Lewis X and Lewis X/SSEA-1 antigens. May be involved in blood group Lewis determination. Lewis-positive individuals have an active enzyme while Lewis-negative individuals have an inactive enzyme	637655	-	-
GDP-L-fucose + 1,3-beta-D-galactosyl-N-acetyl-D-glucosaminyl-R	GDP + 1,3-beta-D-galactosyl-(alpha-(1,4)-L-fucosyl)-N-acetyl-D-glucosaminyl-R		Homo sapiens	the enzyme may catalyze alpha1-3 and alpha-1,4 glycosidic linkages involved in the expression of VIM-2, Lewis A, Lewis B, sialyl Lewis X and Lewis X/SSEA-1 antigens. May be involved in blood group Lewis determination. Lewis-positive individuals have an active enzyme while Lewis-negative individuals have an inactive enzyme	637656	-	-
GDP-L-fucose + 1,3-beta-D-galactosyl-N-acetyl-D-glucosaminyl-R	GDP + 1,3-beta-D-galactosyl-(alpha-(1,4)-L-fucosyl)-N-acetyl-D-glucosaminyl-		Homo sapiens	the enzyme may catalyze alpha1-3 and alpha-1,4 glycosidic linkages involved in the	637657	-	-

	R			expression of VIM-2, Lewis A, Lewis B, sialyl Lewis X and Lewis X/SSEA-1 antigens. May be involved in blood group Lewis determination. Lewis-positive individuals have an active enzyme while Lewis-negative individuals have an inactive enzyme			
GDP-L-fucose + 1,3-beta-D-galactosyl-N-acetyl-D-glucosaminyl-R	GDP + 1,3-beta-D-galactosyl-(alpha-(1,4)-L-fucosyl)-N-acetyl-D-glucosaminyl-R		Homo sapiens	the enzyme may catalyze alpha1-3 and alpha-1,4 glycosidic linkages involved in the expression of VIM-2, Lewis A, Lewis B, sialyl Lewis X and Lewis X/SSEA-1 antigens. May be involved in blood group Lewis determination. Lewis-positive individuals have an active enzyme while Lewis-negative individuals have an inactive enzyme	637658	-	-
GDP-L-fucose + 1,3-beta-D-galactosyl-N-acetyl-D-glucosaminyl-R	GDP + 1,3-beta-D-galactosyl-(alpha-(1,4)-L-fucosyl)-N-acetyl-D-glucosaminyl-R		Homo sapiens	the enzyme may catalyze alpha1-3 and alpha-1,4 glycosidic linkages involved in the expression of VIM-2, Lewis A, Lewis B, sialyl Lewis X and Lewis X/SSEA-1 antigens. May be involved in blood group Lewis determination. Lewis-positive individuals have an active enzyme while Lewis-negative individuals have	637659	-	-

				an inactive enzyme			
GDP-L-fucose + 1,3-beta-D-galactosyl-N-acetyl-D-glucosaminyl-R	GDP + 1,3-beta-D-galactosyl-(alpha-(1,4)-L-fucosyl)-N-acetyl-D-glucosaminyl-R		Homo sapiens	the enzyme may catalyze alpha1-3 and alpha-1,4 glycosidic linkages involved in the expression of VIM-2, Lewis A, Lewis B, sialyl Lewis X and Lewis X/SSEA-1 antigens. May be involved in blood group Lewis determination. Lewis-positive individuals have an active enzyme while Lewis-negative individuals have an inactive enzyme	637660	-	-
GDP-L-fucose + 1,3-beta-D-galactosyl-N-acetyl-D-glucosaminyl-R	GDP + 1,3-beta-D-galactosyl-(alpha-(1,4)-L-fucosyl)-N-acetyl-D-glucosaminyl-R		Pan troglodytes	the enzyme may catalyze alpha-1,3 and alpha-1,4 glycosidic linkages involved in expression of sialyl Lewis X and Lewis X/SSEA-1 antigens. It may be involved in blood group Lewis determination	637649	-	-

COFACTOR ORGANISM COMMENTARY LITERATURE IMAGE

No entries in this field

METALS and IONS	ORGANISM	COMMENTARY	LITERATURE
Ba2+	Homo sapiens	stimulates	637635
Ca2+	Homo sapiens	can replace Mn2+ for activation, optimum concentration is 10-15 mM	660797
Ca2+	Homo sapiens	leads to 2.1fold activation of SFT3	661313
Ca2+	Homo sapiens	stimulates	637635
Cd2+	Homo sapiens	stimulates	637635
Co2+	Homo	leads to 2.8fold activation of SFT3	661313

	sapiens		
Co2+	Homo sapiens	stimulates	637635
Cu2+	Homo sapiens	no significant activity is detected	661313
Mg2+	Homo sapiens	can replace Mn2+ for activation, optimum concentration is 10-15 mM	660797
Mg2+	Homo sapiens	leads to 2.5fold activation of SFT3	661313
Mg2+	Homo sapiens	stimulates, 20 mM required for maximal activation	637635
Mg2+	Silene alba	required for activity	661845
Mn2+	Homo sapiens	-	637636
Mn2+	Homo sapiens	binds the enzyme and increases affinity for the acceptor. One possible functional role of manganese in catalysis can be as an electrophilic catalyst, co-ordinating the negative charges of the phosphate groups of the GDP-Fuc donor and promoting Fuc transfer. A low pH values such role would be played by the proton. Mn2+ leads to 2.7fold activation of SFT3	661313
Mn2+	Homo sapiens	Fuc-T V is Mn2+ dependent	661341
Mn2+	Homo sapiens	required for activation in vitro, optimum concentration is 10-15 mM	660797
Mn2+	Homo sapiens	stimulates, activation is maximal at 5 mM	637635
Mn2+	Silene alba	required for activity	661845
Mn2+	Vaccinium myrtillus	activation above pH 8.0	637636
More	Homo sapiens	Cu2+ inactivates the enzyme	660797
More	Homo sapiens	the enzyme retains approximately 35% of its maximal activity in the absence of metal ions	661313
Ni2+	Homo sapiens	stimulates	637635
Zn2+	Homo sapiens	can replace Mn2+ for activation, but shows only half the maximal activity, optimum concentration is 10-15 mM	660797
Zn2+	Homo sapiens	leads to 80% inhibition of STF3	661313
Zn2+	Homo sapiens	stimulates	637635

INHIBITORS	ORGANISM	COMMENTARY	LITERATURE	IMAGE
(-)-epigallocatechin-3-gallate	Homo sapiens	time-dependent, irreversible	660797	2D-image
2'-Fucosyllactose	Homo sapiens	-	637634	2D-image
2,3-Dihydroxybenzoic acid	Homo sapiens	-	660797	2D-image
2,4,6-Trinitrobenzenesulfonate	Silene alba	5 mM, activity is decreased to 82%; 5 mM, activity is decreased to 86%	661845	2D-image
2,4-dihydroxybenzoic acid	Homo sapiens	-	660797	2D-image
2,5-dihydroxybenzoic acid	Homo	-	660797	2D-

	sapiens			image
3,4,5-Trihydroxybenzoic acid	Homo sapiens	gallic acid, time-dependent, irreversible	660797	2D-image
3,4,5-trimethoxybenzoic acid	Homo sapiens	-	660797	-
3,4-Dihydroxybenzoic acid	Homo sapiens	-	660797	2D-image
3,4-dimethoxybenzoic acid	Homo sapiens	-	660797	2D-image
3,5-dimethoxy 4-hydroxybenzoic acid	Homo sapiens	syringic acid	660797	-
C-fucosyl analogon of GDP-fucose	Homo sapiens	-	661341	-
carba-fucosyl analogon of GDP-fucose	Homo sapiens	-	661341	-
Co2+	Vaccinium myrtillus	20 mM, 98% inhibition	637636	2D-image
Cu2+	Vaccinium myrtillus	20 mM, complete inhibition	637636	2D-image
Diethylpyrocarbonate	Silene alba	0.5 mM, activity is decreased to 11%; 0.5 mM, activity is decreased to 13%	661845	2D-image
Ellagic acid	Homo sapiens	-	660797	2D-image
Ethylenediaminetetraacetic acid	Silene alba	-	661845	2D-image
Galbeta(1,3)GalNAc	Homo sapiens	-	637634	2D-image
Galbeta(1,4)(3-deoxy) GlcNAcbetaOallyl	Homo sapiens	IC50: 710 mM	637634	2D-image
Galbeta(1,4)deoxynojirimycin	Homo sapiens	IC50: 8 mM	637634	2D-image
GDP	Homo sapiens	0.05 mM	637634	2D-image
GDP	Homo sapiens	competitive with respect to GDP-fucose	637635	2D-image
GDP-Man	Homo sapiens	IC50: 2 mM	637634	2D-image
GMP	Homo sapiens	competitive with respect to GDP-fucose	637635	2D-image
lacitol	Homo sapiens	competitive with respect to lactose	637635	-
lacto-N-fucopentaitol I	Homo sapiens	-	637635	2D-image
methyl gallate	Homo sapiens	-	660797	2D-image
Mn2+	Vaccinium myrtillus	20 mM, 40% inhibition below pH 8.0	637636	2D-image
More	Silene alba	the Silene alba alpha-4-FucT is insensitive to N-ethylmaleimide treatment (5 mM), in contrast to human FUT3	661845	-
N-Bromosuccinimide	Silene alba	0.5 mM, activity is decreased to 8%; 0.5 mM, activity is decreased to 9%	661845	2D-image
NEM	Homo	-	637647	2D-

	sapiens				image
NEM	Homo sapiens	3 mM, 59°C		637635	2D-image
propyl gallate	Homo sapiens		-	660797	2D-image
unsaturated carba-fucosyl analogon of GDP-fucose	Homo sapiens		-	661341	-
Zn2+	Silene alba		-	661845	2D-image
Zn2+	Vaccinium myrtillus	20 mM, complete inhibition		637636	2D-image

ACTIVATING COMPOUND	ORGANISM	COMMENTARY	LITERATURE	IMAGE
Phenylglyoxal	Silene alba	5 mM, FucT showed enhanced activity (114%); 5 mM, FucT shows enhanced activity (118%)	661845	2D-image

KM VALUE [mM]	KM VALUE [mM] Maximum	SUBSTRATE	ORGANISM	COMMENTARY	LITERATURE	IMAGE
11	-	2'-Fucosyllactose	Homo sapiens	-	637635	2D-image
0.16	-	2-O-MeGalbeta(1,3) GlcNAcbeta-O-Bn	Homo sapiens	enzyme form FTB	637647	2D-image
0.4	-	2-O-MeGalbeta(1,3) GlcNAcbeta-O-Bn	Homo sapiens	enzyme form FTA	637647	2D-image
0.047	-	3-O-sulfoGalbeta(1,3) GlcNAcbeta-O-Al	Homo sapiens	enzyme form FTB	637647	2D-image
0.1	-	3-O-sulfoGalbeta(1,3) GlcNAcbeta-O-Al	Homo sapiens	enzyme form FTA	637647	2D-image
0.045	-	ancrod	Homo sapiens	enzyme form FTB	637647	-
0.167	-	asialo ancrod	Homo sapiens	enzyme form FTB	637647	-
0.63	-	fetuin triantennary asialoglycopeptide	Homo sapiens	enzyme form FTB	637647	-
1.43	-	fetuin triantennary glycopeptide	Homo sapiens	enzyme form FTB	637647	-
0.2	-	Fuc-alpha-1,2Gal-beta-1,3GlcNAc-sp-biotin	Homo sapiens	wildtype	661839	-
0.3	-	Fuc-alpha-1,2Gal-beta-1,3GlcNAc-sp-biotin	Homo sapiens	mutant W111F; mutant W111Y	661839	-
2.5	-	Fuc-alpha-1,2Gal-beta-1,3GlcNAc-sp-biotin	Homo sapiens	mutant W111A	661839	-
0.1	-	Fuc-alpha-1,2Gal-beta-1,4GlcNAc-sp-biotin	Homo sapiens	mutant W124R	661839	-
1.1	-	Fuc-alpha-1,2Gal-beta-1,4GlcNAc-sp-biotin	Homo sapiens	wildtype	661839	-
1.3	-	Fuc-alpha-1,2Gal-beta-1,4GlcNAc-sp-biotin	Homo sapiens	mutant W124Y	661839	-
0.1	-	Fucalpha(1,2)Galbeta (1,3)GlcNAc	Homo sapiens	-	637645	-
0.2	-	Fucalpha(1,2)Galbeta	Homo	wild-type enzyme	637646	-

		(1,3)GlcNAc	Homo sapiens			
0.4	-	Fucalpha(1,2)Galbeta (1,3)GlcNAc	Homo sapiens	mutant enzyme D112E	637646	-
2	-	Fucalpha(1,2)Galbeta (1,3)GlcNAc	Homo sapiens	mutant enzyme W111R/D112E	637646	-
3.8	-	Fucalpha(1,2)Galbeta (1,3)GlcNAc	Homo sapiens	fucosyltransferase III mutant enzyme D336A	637645	-
0.8	-	Fucalpha(1,2)Galbeta (1,3)GlcNAcbeta(1,3) Galbeta(1,4)Glc	Homo sapiens	-	637634	-
1.52	-	Fucalpha(1,2)Galbeta (1,4)Glc	Homo sapiens	enzyme form FTB	637647	-
0.5	-	Fucalpha(1,2)Galbeta (1,4)GlcNAc	Homo sapiens	mutant enzyme W111R/D112E	637646	-
0.7	-	Fucalpha(1,2)Galbeta (1,4)GlcNAc	Homo sapiens	mutant enzyme W111R	637646	-
8.4	-	Gal-beta-1,3-GlcNAc-O-(CH2)8CO2CH3	Helicobacter pylori	strain UA948	662137	-
9.7	-	Gal-beta-1,3-GlcNAc-O-(CH2)8CO2CH3	Helicobacter pylori	chimeric FucT UA948(1-360) 11639(360-478)	662137	-
20.8	-	Gal-beta-1,3-GlcNAc-O-(CH2)8CO2CH3	Helicobacter pylori	chimeric FucT 11639 (347CNDAHYSALH)	662137	-
22.7	-	Gal-beta-1,3-GlcNAc-O-(CH2)8CO2CH3	Helicobacter pylori	chimeric FucT UA948 (345DNPFIFC)	662137	-
0.7	-	Gal-beta-1,3GlcNAcO (CH2)3NHCO(CH2)5NH-biotin	Homo sapiens	at pH 7.0 and presence of Mn2+	661313	-
0.9	-	Gal-beta-1,3GlcNAcO (CH2)3NHCO(CH2)5NH-biotin	Homo sapiens	at pH 4.7 and absence of Mn2+	661313	-
1.5	-	Gal-beta-1,3GlcNAcO (CH2)3NHCO(CH2)5NH-biotin	Homo sapiens	at pH 4.7 and presence of Mn2+	661313	-
3.3	-	Gal-beta-1,3GlcNAcO (CH2)3NHCO(CH2)5NH-biotin	Homo sapiens	at pH 7.0 and absence of Mn2+	661313	-
0.17	-	Gal-beta-1,4-GlcNAc-O-(CH2)8CO2CH3	Helicobacter pylori	chimeric FucT UA948 (345DNPFIFC)	662137	-
0.31	-	Gal-beta-1,4-GlcNAc-O-(CH2)8CO2CH3	Helicobacter pylori	wild type, strain NCTC116639	662137	-
0.7	-	Gal-beta-1,4-GlcNAc-O-(CH2)8CO2CH3	Helicobacter pylori	chimeric FucT 11639(1-359) UA948(361-462)	662137	-
1.2	-	Gal-beta-1,4-GlcNAc-O-(CH2)8CO2CH3	Helicobacter pylori	strain UA948	662137	-
1.3	-	Gal-beta-1,4-GlcNAc-O-(CH2)8CO2CH3	Helicobacter pylori	chimeric FucT UA948(1-360) 11639(360-478)	662137	-
2.2	-	Gal-beta-1,4-GlcNAc-O-(CH2)8CO2CH3	Helicobacter pylori	chimeric FucT 11639 (347CNDAHYSALH)	662137	-
0.6	-	Galbeta(1,3)GlcNAc	Homo sapiens	-	637634	2D-image
1.9	-	Galbeta(1,3)GlcNAc	Homo sapiens	-	637635	2D-image
12.7	-	Galbeta(1,3)GlcNAc	Homo sapiens	-	637640	2D-image

0.76	-	Galbeta(1,3)GlcNAc-(CH2)3-NHCO-(CH2)5-NH-biotin	Homo sapiens	enzyme expressed n Sf9 cells	637643	-
0.87	-	Galbeta(1,3)GlcNAc-(CH2)3-NHCO-(CH2)5-NH-biotin	Homo sapiens	enzyme expressed n Trichoplusia ni	637643	-
2.4	-	Galbeta(1,3)GlcNAcbeta(1,3)Galbeta(1,4)Glc	Homo sapiens	-	637635	2D-image
0.012	-	Galbeta(1,4)(5-thioGlc)	Homo sapiens	-	637634	2D-image
0.5	-	Galbeta(1,4)Glc	Homo sapiens	-	637634	2D-image
0.035	-	Galbeta(1,4)GlcNAc	Homo sapiens	-	637634	2D-image
1.6	-	Galbeta(1,4)GlcNAc	Homo sapiens	-	637635	2D-image
8.1	-	Galbeta(1,4)GlcNAc	Homo sapiens	-	637640	2D-image
0.4	-	Galbeta(1,4)GlcNAcbeta(1,2)Man	Homo sapiens	-	637634	-
3.8	-	Galbeta(1,4)GlcNAcbeta(1,3)Galbeta(1,4)Glc	Homo sapiens	-	637635	2D-image
0.016	-	Galbeta(1,4) GlcNAcbetaOallyl	Homo sapiens	-	637634	2D-image
0.034	-	Galbeta(1,4)Glucal	Homo sapiens	-	637634	2D-image
12	-	Galbeta(1,6)Galbeta(1,4) Glc	Homo sapiens	-	637635	-
0.016	-	GDP	Homo sapiens	-	637635	2D-image
0.1145	-	GDP-D-fucose	Homo sapiens	mutant enzyme D336A	637645	2D-image
0.03	-	GDP-fucose	Homo sapiens	mutant W124R, with Fuc-alpha-1,2Gal-beta-1,4GlcNAc-sp-biotin	661839	2D-image
0.034	-	GDP-fucose	Homo sapiens	mutant W111Y, with Fuc-alpha-1,2Gal-beta-1,3GlcNAc-sp-biotin	661839	2D-image
0.035	-	GDP-fucose	Homo sapiens	mutant W124Y, with Fuc-alpha-1,2Gal-beta-1,4GlcNAc-sp-biotin; wildtype, with Fuc-alpha-1,2Gal-beta-1,3GlcNAc-sp-biotin	661839	2D-image
0.0357	-	GDP-fucose	Helicobacter pylori	with Gal-beta-1,3-GlcNAc-O-(CH2)8CO2CH3, strain UA948	662137	2D-image
0.037	-	GDP-fucose	Homo sapiens	mutant W111F, with Fuc-alpha-1,2Gal-beta-1,3GlcNAc-sp-biotin	661839	2D-image
0.038	-	GDP-fucose	Homo sapiens	wildtype, with Fuc-alpha-1,2Gal-beta-1,4GlcNAc-sp-biotin	661839	2D-image
0.046	-	GDP-fucose	Homo sapiens	mutant W111A, with Fuc-alpha-1,2Gal-beta-1,3GlcNAc-sp-biotin	661839	2D-image
0.048	-	GDP-fucose	Helicobacter pylori	with Gal-beta-1,4beta-GlcNAc-O-(CH2)8CO2CH3, wild type, strain NCTC116639	662137	2D-image
0.0481	-	GDP-fucose	Helicobacter pylori	with Gal-beta-1,4-GlcNAc-O-(CH2)8CO2CH3, chimeric FucT UA948(345DNPFIFC)	662137	2D-image

0.0504	-	GDP-fucose	Homo sapiens	-	661341	2D-image
0.0546	-	GDP-fucose	Helicobacter pylori	with Gal-beta-1,3-GlcNAc-O-(CH2)8CO2CH3, chimeric FucT 11639(347CNDAHYSALH)	662137	2D-image
0.0683	-	GDP-fucose	Helicobacter pylori	with Gal-beta-1,4-GlcNAc-O-(CH2)8CO2CH3, strain UA948	662137	2D-image
0.153	-	GDP-fucose	Helicobacter pylori	with beta-Gal1,4-GlcNAc-O-(CH2)8CO2CH3, chimeric FucT 11639(1-359)UA948(361-462)	662137	2D-image
0.188	-	GDP-fucose	Helicobacter pylori	with Gal-beta-1,3-GlcNAc-O-(CH2)8CO2CH3, chimeric FucT UA948(1-360)11639(360-478)	662137	2D-image
0.213	-	GDP-fucose	Helicobacter pylori	with Gal-beta-1,3-GlcNAc-O-(CH2)8CO2CH3, chimeric FucT UA948(345DNPFIFC)	662137	2D-image
0.236	-	GDP-fucose	Helicobacter pylori	with Gal-beta-1,4-GlcNAc-O-(CH2)8CO2CH3, chimeric FucT UA948(1-360)11639(360-478)	662137	2D-image
0.244	-	GDP-fucose	Helicobacter pylori	with Gal-beta-1,4-GlcNAc-O-(CH2)8CO2CH3, chimeric FucT 11639(347CNDAHYSALH)	662137	2D-image
0.005	-	GDP-L-fucose	Homo sapiens	reaction with Galbeta(1,4) GlcNAc	637635	2D-image
0.0105	-	GDP-L-fucose	Homo sapiens	reaction with Galbeta(1,3) GlcNAc	637635	2D-image
0.0131	-	GDP-L-fucose	Homo sapiens	reaction with lactose	637635	2D-image
0.03	-	GDP-L-fucose	Homo sapiens	mutant enzyme W111R	637646	2D-image
0.032	-	GDP-L-fucose	Homo sapiens	mutant enzyme W111R/D112E	637646	2D-image
0.033	-	GDP-L-fucose	Homo sapiens	mutant enzyme D112E	637646	2D-image
0.0336	-	GDP-L-fucose	Homo sapiens	fucosyltransferase III	637645	2D-image
0.035	-	GDP-L-fucose	Homo sapiens	wild-type enzyme	637646	2D-image
0.06	-	GMP	Homo sapiens	-	637635	2D-image
0.67	-	NeuAcalpha(2,3)Galbeta (1,3)GlcNAcbeta-O-Bn	Homo sapiens	enzyme form FTB	637647	2D-image
2.5	-	NeuAcalpha(2,3)Galbeta (1,3)GlcNAcbeta-O-Bn	Homo sapiens	enzyme form FTA	637647	2D-image
0.1	-	NeuAcalpha(2,3)Galbeta (1,4)GlcNAc	Homo sapiens	-	637634	2D-image
0.28	-	NeuAcalpha(2,3)Galbeta (1,4)GlcNAc	Homo sapiens	-	637634	2D-image
0.77	-	NeuAcalpha(2,3)Galbeta (1,4)GlcNAcbeta(1,6) (Galbeta(1,3)) GalNAcalpha-OMe	Homo sapiens	enzyme form FTB	637647	2D-image
3.3	-	NeuAcalpha(2,3)Galbeta (1,4)GlcNAcbeta(1,6) (Galbeta(1,3))	Homo sapiens	enzyme form FTB	637647	2D-image

		GalNAcalpha-OMe				
0.064	-	NeuAcalpha(2,3)Galbeta (1,4)Glucal	Homo sapiens	-	637634	2D-image
0.07	-	NeuAcalpha(2,6)Galbeta (1,4)GlcNAc	Homo sapiens	-	637634	2D-image

Ki VALUE [mM]	Ki VALUE [mM] Maximum	INHIBITOR	ORGANISM	COMMENTARY	LITERATURE	IMAGE
0.0007	-	(-)-epigallocatechin-3-gallate	Homo sapiens	presence of MnCl2, overnight (15 h) pre-incubation of compound and enzyme before initiation of the reaction with GDP-fucose	660797	2D-image
0.0022	-	(-)-epigallocatechin-3-gallate	Homo sapiens	60 min assay, no pre-incubation; overnight (15 h) pre-incubation of compound and enzyme before initiation of the reaction with GDP-fucose, MnCl2 omitted in the overnight pre-incubation mixture	660797	2D-image
7	-	2'-Fucosyllactose	Homo sapiens	-	637635	2D-image
0.115	-	2,5-dihydroxybenzoic acid	Homo sapiens	presence of MnCl2, overnight (15 h) pre-incubation of compound and enzyme before initiation of the reaction with GDP-fucose	660797	2D-image
6e-05	-	3,4,5-Trihydroxybenzoic acid	Homo sapiens	presence of MnCl2, overnight (15 h) pre-incubation of compound and enzyme before initiation of the reaction with GDP-fucose	660797	2D-image
0.0054	-	3,4,5-Trihydroxybenzoic acid	Homo sapiens	overnight (15 h) pre-incubation of compound and enzyme before initiation of the reaction with GDP-fucose, MnCl2 omitted in the overnight pre-incubation mixture	660797	2D-image
0.008	-	3,4,5-Trihydroxybenzoic acid	Homo sapiens	60 min assay, no pre-incubation	660797	2D-image
0.137	-	3,4-Dihydroxybenzoic acid	Homo sapiens	presence of MnCl2, overnight (15 h) pre-incubation of compound and enzyme before initiation of the reaction with GDP-fucose	660797	2D-image
0.889	-	C-fucosyl analogon of GDP-fucose	Homo sapiens	-	661341	-
0.0671	-	carba-fucosyl analogon of GDP-fucose	Homo sapiens	-	661341	-
0.0012	-	Ellagic acid	Homo sapiens	presence of MnCl2, overnight (15 h) pre-incubation of compound and enzyme before initiation of the reaction with GDP-fucose	660797	2D-image
17	-	lacitol	Homo sapiens	-	637635	-
0.6	-	lacto-N-fucopentaitol I	Homo sapiens	-	637635	2D-image
0.008	-	methyl gallate	Homo sapiens	presence of MnCl2, overnight (15 h) pre-incubation of compound and enzyme before initiation of the reaction	660797	2D-image

				with GDP-fucose		
additional information	-	More	Homo sapiens	2,3-dihydroxybenzoic acid: above 0.200, presence of MnCl2, overnight (15 h) pre-incubation of compound and enzyme before initiation of the reaction with GDP-fucose, 2,4-dihydroxybenzoic acid: above 0.200, presence of MnCl2, overnight (15 h) pre-incubation of compound and enzyme before initiation of the reaction with GDP-fucose, 3,5-dimethoxy 4-hydroxybenzoic acid: above 0.200, presence of MnCl2, overnight (15 h) pre-incubation of compound and enzyme before initiation of the reaction with GDP-fucose, 3,4-dimethoxybenzoic acid: above 0.200, presence of MnCl2, overnight (15 h) pre-incubation of compound and enzyme before initiation of the reaction with GDP-fucose, 3,4,5-trimethoxybenzoic acid: above 0.200, presence of MnCl2, overnight (15 h) pre-incubation of compound and enzyme before initiation of the reaction with GDP-fucose	660797	-
0.25	-	NEM	Homo sapiens	enzyme form FTA and FTB	637647	● 2D-image
0.045	-	propyl gallate	Homo sapiens	presence of MnCl2, overnight (15 h) pre-incubation of compound and enzyme before initiation of the reaction with GDP-fucose	660797	● 2D-image
0.0256	-	unsaturated carba-fucosyl analogon of GDP-fucose	Homo sapiens	-	661341	-

pI VALUE	pI VALUE MAXIMUM	ORGANISM	COMMENTARY	LITERATURE
8.9	-	Silene alba	membrane enzyme, isoelectric gel electrophoresis, chromatofocusing	661845
8.8	-	Silene alba	soluble form, isoelectric gel electrophoresis, chromatofocusing	661845
additional information	-	Silene alba	above 10.0, membrane enzyme, isoelectric gel electrophoresis, chromatofocussing	661845

TURNOVER NUMBER[1/s]	TURNOVER NUMBER MAXIMUM[1/s]	SUBSTRATE	ORGANISM	COMMENTARY	LITERATURE	IMAGE
8.02	-	Fucalpha(1,2) Galbeta(1,3)GlcNAc	Homo sapiens	fucosyltransferase III	637645	-
3.02	-	Fucalpha(1,2) Galbeta(1,3)GlcNAc	Homo sapiens	fucosyltransferase III mutant enzyme D336A	637645	-
0.4	-	Galbeta(1,3) GlcNAc-(CH2)3-NHCO-(CH2)5-NH-biotin	Homo sapiens	enzyme expressed in Trichoplusia ni	637643	-
0.3	-	Gal-beta-1,3GlcNAcO(CH2) 3NHCO(CH2)5NH-biotin	Homo sapiens	at pH 4.7 and absence of Mn2+	661313	-

0.2	-	Gal-beta-1,3GlcNAcO(CH2)3NHCO(CH2)5NH-biotin	Homo sapiens	at pH 4.7 and presence of Mn2+; at pH 7.0 and presence of Mn2+	661313	-
0.1	-	Gal-beta-1,3GlcNAcO(CH2)3NHCO(CH2)5NH-biotin	Homo sapiens	at pH 7.0 and absence of Mn2+	661313	-
0.009	-	Galbeta(1,3)GlcNAc-(CH2)3-NHCO-(CH2)5-NH-biotin	Homo sapiens	enzyme expressed in Sf9 cells	637643	-

SPECIFIC ACTIVITY [µmol/min/mg]	SPECIFIC ACTIVITY MAXIMUM	ORGANISM	COMMENTARY	LITERATURE
567	-	Homo sapiens	enzyme expressed in Sf9 cells	637643
72	-	Homo sapiens	enzyme expressed in Trichoplusia ni	637643
2.05	-	Homo sapiens	reaction with 2'-fucosyllactose	637635
1.13	-	Homo sapiens	reaction with lacto-N-fucopentaose I	637635
0.061	-	Homo sapiens	-	637647
0.0238	-	Helicobacter pylori	alpha-1,3 activity, alpha-1,4 activity is one third of the alpha 1,3-activity	662137
0.0163	-	Helicobacter pylori	alpha 1,3 activity, wild type, strain NCTC116639	662137
0.000312	-	Silene alba	type 1 acceptor (Gal-beta-1,3GlcNAc-beta-O-(CH2)7CH3)	661845
0.000265	-	Silene alba	H-type 1 acceptor (Fuc-alpha-1,2Gal-beta-1,3GlcNAc-O-C6H5)	661845
6.7e-05	-	Silene alba	stamen	661845
5.2e-05	-	Silene alba	type 1 acceptor (Gal-beta-1,3GlcNAc-beta-O-(CH2)7CH3)	661845
5e-05	-	Silene alba	seedling	661845
4.5e-05	-	Silene alba	H-type 1 acceptor (Fuc-alpha-1,2Gal-beta-1,3GlcNAc-O-C6H5)	661845
3.9e-05	-	Silene alba	young roots	661845
2.6e-05	-	Silene alba	young leaves	661845
1.5e-05	-	Silene alba	root; pistill	661845
2e-06	-	Silene alba	shoot; old roots; petal	661845
1e-06	-	Silene alba	old leaves; sepal	661845
additional information	-	Homo sapiens	-	637637
additional information	-	Silene alba	below 0.0000001, H-type 2 acceptor (Fuc-alpha-1,2Gal-beta-1,4GlcNAc-O-C6H5); below 0.0000001, type 2 acceptor (Gal-beta-1,4GlcNAc-beta-O-(CH2)7CH3)	661845

pH OPTIMUM	pH MAXIMUM	ORGANISM	COMMENTARY	LITERATURE

8	-	Silene alba	-	661845
7	-	Homo sapiens	in the presence of Mn2+	661313
7	-	Vaccinium myrtillus	both in the presence and in absence of Mn2+	637636
7	7.8	Homo sapiens	-	637635
4.5	-	Homo sapiens	in the absence of Mn2+	661313

pH RANGE	pH RANGE MAXIMUM	ORGANISM	COMMENTARY	LITERATURE
6.2	8.5	Homo sapiens	pH 6.2: about 70% of maximal activity, pH 8.5: about 90% of maximal activity	637635
6	8	Homo sapiens	in the presence of Mn2+	661313

TEMPERATURE OPTIMUM	TEMPERATURE OPTIMUM MAXIMUM	ORGANISM	COMMENTARY	LITERATURE
45	-	Silene alba	-	661845
40	-	Vaccinium myrtillus	-	637636

TEMPERATURE RANGE	TEMPERATURE MAXIMUM	ORGANISM	COMMENTARY	LITERATURE
25	50	Silene alba	-	661845
25	50	Vaccinium myrtillus	25°C: about 50% of maximal activity, 50°C: about 40% of maximal activity	637636

SOURCE TISSUE	ORGANISM	COMMENTARY	LITERATURE	SOURCE
brain	Bos taurus	-	637650	BRENDA
cell suspension culture	Vaccinium myrtillus	-	637636	BRENDA
colon	Rattus norvegicus	-	489362	BRENDA
epithelial cell	Homo sapiens	cystic fibrosis airway epithelial cell	661277	BRENDA
HEK-293 cell	Homo sapiens	-	660797	BRENDA
kidney	Bos taurus	-	637650	BRENDA
leaf	Silene alba	-	661845	BRENDA
liver	Bos taurus	-	637650	BRENDA
liver	Homo sapiens	-	637652	BRENDA
lung	Bos taurus	-	637650	BRENDA
lung cancer cell	Homo sapiens	-	637647	BRENDA
milk	Homo sapiens	-	637634	BRENDA
petal	Silene alba	-	661845	BRENDA
pistil	Silene alba	-	661845	BRENDA
root	Silene alba	-	661845	BRENDA
sepal	Silene alba	-	661845	BRENDA
shoot	Silene alba	-	661845	BRENDA
stamen	Silene alba	-	661845	BRENDA

LOCALIZATION	ORGANISM	COMMENTARY	GeneOntology No.	LITERATURE	SOURCE
					BRENDA

cell surface	Homo sapiens	fusion proteins PIR1-HA-FUT6 and PIR2-FLAG-FUT6	-	661803	
Golgi apparatus	Homo sapiens	-	-	637637	BRENDA
Golgi cis-face	Mesocricetus auratus	FT3dc mutant	-	661236	BRENDA
Golgi membrane	Silene alba	-	-	661845	BRENDA
Golgi trans face	Mesocricetus auratus	FT3 wildtype	-	661236	BRENDA
Golgi trans-face	Homo sapiens	Golgi type II membrane protein	-	637637	BRENDA
membrane	Bos taurus	-	-	637650	BRENDA
membrane	Homo sapiens	-	-	637637, 637651, 637652, 637653, 637654, 637655, 637656, 637657, 637658, 637659, 637660	BRENDA
membrane	Homo sapiens	stable BHK-21 cell lines express the Golgi bound form and two secretory forms of the enzyme	-	637648	BRENDA
membrane	Pan troglodytes	-	-	637649	BRENDA
microsome	Vaccinium myrtillus	-	-	637636	BRENDA
soluble	Homo sapiens	-	-	637637, 662484	BRENDA
soluble	Homo sapiens	stable BHK-21 cell lines express the Golgi bound form and two secretory forms of the enzyme. 40% of the enzyme activity synthesized by cells transfected with the Golgi form of the enzyme are constitutively secreted into the medium	-	637648	BRENDA
soluble	Silene alba	-	-	661845	BRENDA

ACCESSION CODE	ENTRY NAME	ORGANISM	NO. OF AA	MOLECULAR WEIGHT[Da]	SOURCE	Sequence
Q8HYJ4 pBLAST	FUT5_PONPY	Pongo pygmaeus	374	43035	Swiss-Prot	Show Sequence
P56433 pBLAST	FUT5_PANTR	Pan troglodytes	374	43034	Swiss-Prot	Show Sequence
P51993 pBLAST	FUT6_HUMAN	Homo sapiens	359	41860	Swiss-Prot	Show Sequence
Q8HYJ3 pBLAST	FUT5_HYLLA	Hylobates lar	374	43091	Swiss-Prot	Show Sequence
Q8HYJ6 pBLAST	FUT6_GORGO	Gorilla gorilla gorilla	359	41688	Swiss-Prot	Show Sequence
Q8HYJ7 pBLAST	FUT5_GORGO	Gorilla gorilla gorilla	374	43122	Swiss-Prot	Show Sequence
Q8HYJ5 pBLAST	FUT3_PONPY	Pongo pygmaeus	372	43008	Swiss-Prot	Show Sequence
P21217 pBLAST	FUT3_HUMAN	Homo sapiens	361	42117	Swiss-Prot	Show Sequence

Q19058 pBLAST	FUT3_PANTR	Pan troglodytes	372	43234	Swiss-Prot	Show Sequence
Q11126 pBLAST	FUT3_BOVIN	Bos taurus	365	42654	Swiss-Prot	Show Sequence
Q9GKU6 pBLAST	FUT6_PONPY	Pongo pygmaeus	359	41848	Swiss-Prot	Show Sequence
Q11128 pBLAST	FUT5_HUMAN	Homo sapiens	374	43008	Swiss-Prot	Show Sequence
P56434 pBLAST	FUT6_PANTR	Pan troglodytes	359	41893	Swiss-Prot	Show Sequence
Q5TJK3 pBLAST	Q5TJK3_PHYPA	Physcomitrella patens	437	48951	TrEMBL	Show Sequence
Q599J3 pBLAST	Q599J3_9ROSI	Populus tremula x Populus alba	430	48213	TrEMBL	Show Sequence

PDB ORGANISM

No entries in this field

MOLECULAR WEIGHT	MOLECULR WEIGHT MAXIMUM	ORGANISM	COMMENTARY	LITERATURE
56000	-	Helicobacter pylori	SDS-PAGE	662137
54600	-	Helicobacter pylori	SDS-PAGE	662137
41800	-	Homo sapiens	SDS-PAGE, immunoblot	661839
additional information	-	Homo sapiens	disulfide bonds in FucT III occur between Cys residues Cys81 and Cys338 and between Cys91 and Cys341 at the N and C termini of the catalytic domain, bringing theses ends close together in space	637641
additional information	-	Pan troglodytes	there are two alleles, A and B. Allele A has Arg162 and Val304 allele B has Gly162 and Met304	637649
additional information	-	Silene alba	above 100 kDa for the membrane-anchored enzyme, selective ultra-filtration; between 50 and 100 kDa for the soluble enzyme, selective ultra-filtration	661845

SUBUNITS	ORGANISM	COMMENTARY	LITERATURE
?	Homo sapiens	-	637651
?	Homo sapiens	x * 40000-42000, SDS-PAGE	637648
?	Homo sapiens	x * 42117, calculation from nucleotide sequence	637660
?	Homo sapiens	x * 51000 + x * 53000, SDS-PAGE	637635
?	Pan troglodytes	x * 43233, calculation from nucleotide sequence	637649
?	Rattus norvegicus	x * 68780, SDS-PAGE	489362
More	Homo sapiens	the enzyme is present in an equilibrium of monomer/dimer in the trans-Golgi/trans-Golgi-network of transfected BHK cells	637637

POSTTRANSLATIONAL MODIFICATION	ORGANISM	COMMENTARY	LITERATURE
Glycoprotein	Homo	the two glycosylation sites from SFT3 are occupied by peptide-	637643

	sapiens	N-glycanase F, whereas 50% of SFT3 secreted by Tn cells is resistant to deglycosylation by this enzyme	
Glycoprotein	Homo sapiens	the secretory variant of enzyme contains N-linked endo H sensitive carbohydrate chains at its two glycosylation sites	637648
More	Homo sapiens	the enzyme expressed in Tn cell line has a lower global charge, possibly due to post-translational modifications, such as phosphorylatopm or sulfation	637643

Crystallization/COMMENTARY ORGANISM LITERATURE

No entries in this field

pH STABILITY pH STABILITY MAXIMUM ORGANISM COMMENTARY LITERATURE

No entries in this field

TEMPERATURE STABILITY	TEMPERATURE STABILITY MAXIMUM	ORGANISM	COMMENTARY	LITERATURE
50	-	Vaccinium myrtillus	stable up to	637636
45	-	Silene alba	stable up to 45°C; the enzyme is stable up to 45°C	661845

GENERAL STABILITY ORGANISM LITERATURE

No entries in this field

ORGANIC SOLVENT ORGANISM COMMENTARY LITERATURE

No entries in this field

OXIDATION STABILITY ORGANISM LITERATURE

No entries in this field

STORAGE STABILITY	ORGANISM	LITERATURE
-20°C, 50% glycerol, protein concentration 0.03 mg/ml	Homo sapiens	637635

Purification/COMMENTARY

	ORGANISM	LITERATURE
-	Rattus norvegicus	469362
-	Silene alba	661845
-	Homo sapiens	637635, 637637, 637643, 660797
anion exchange-chromatography on a CM-Sepharose column, followed by an affinity chromatography on a GDP Fractogel column	Homo sapiens	661313
secretory variant of enzyme	Homo sapiens	637648
two molecular forms: FTA and FTB	Homo sapiens	637647

Cloned/COMMENTARY

	ORGANISM	LITERATURE
-	Helicobacter pylori	637638
-	Pongo pygmaeus	661839

-	Hylobates lar	661839
-	Homo sapiens	661277, 661433, 661839
-	Gorilla gorilla	661839
cloning of chimeric FucTs, expression in Escherichia coli HMS174DE3 cells	Helicobacter pylori	662137
construction of plasmids encoding soluble forms of the recombinant human FucT-III where the human IL-2 sequence is linked to Ala47 or Val-36 of the FucT-III and expression in stable transfected BHK-21 cell lines	Homo sapiens	637648
expression in BHK-21B cells	Homo sapiens	637637
expression in COS cells	Homo sapiens	637644
expression in HEK 293 cells	Homo sapiens	660797
expression in Saccharomyces cerevisiae, construction of fusion genes PIR1-HA-FUT6 and PIR2-FLAG-FUT6	Homo sapiens	661803
expression in Spodoptera frugiperda (Sf9) insect cells	Homo sapiens	661313
expression in Spodoptera frugiperda SF-9 cells, the secreted activity SFT3 increases until the 6th day of culture when it reaches the value 1.9 mU x 10e-6 cells and 13.4 mg/l, whereas only 5% of activity is retained inside the cells	Homo sapiens	662484
expression of a secreted form of Fuc-TIII, SFT3, in two insect cell lines, Spodoptera frugiperda and Trichoplusia ni using the baculovirus expression system. The enzyme from the Tn cell line has a lower global charge, possibly due to post-translational modifications, such as phosphorylation or sulfation	Homo sapiens	637643

ENGINEERING	ORGANISM	COMMENTARY	LITERATURE
D112E	Homo sapiens	muation decreases activity of the enzyme and does not interfere with H-type 1/H-type 2 acceptors	637646
D336A	Homo sapiens	fucosyltransferase III mutant enzyme shows reduced activity with a variety of acceptors, 40fold reduction in activity for Fucalpha1,2Galbeta(1,3) GlcNAc. 4fold reduction affinity for GDP-fucose. The single amino acid site Asp336 of FucT III and Ala349 of FucT V constitutes the only difference in the sequence of FucT III and V over the final 210 COOH-terminal amino acid residues, impacts the acceptor substrate profiles of FucT III and FuvT V	637645
FT3dc	Mesocricetus auratus	mutant where the cytoplasmic domain (Asp-2 to Trp-13) is deleted	661236
R110H	Homo sapiens	less than 10% of the wild type alpha-1,3-activity and undetectable alpha-1,4-activity	661839
R110K	Homo sapiens	less than 10% of the wild type alpha-1,3-activity and undetectable alpha-1,4-activity	661839
R110N	Homo sapiens	less than 10% of the wild type alpha-1,3-activity and undetectable alpha-1,4-activity	661839
R110Q	Homo sapiens	less than 10% of the wild type alpha-1,3-activity and undetectable alpha-1,4-activity	661839
R110W	Homo sapiens	no alpha-1,3-activity or alpha-1,4-activity	661839
W111A	Homo sapiens	alpha-1,4-activity is decreased to 10-20% of the wild type activity	661839
W111F	Homo sapiens	alpha-1,4-activity is decreased to 42% of the wild type activity	661839
W111R	Homo sapiens	the mutation changes the specificity for fucose transfer from H-type 1 to H-type 2 acceptors	637646
W111Y	Homo sapiens	alpha-1,4-activity is decreased to 58% of the wild type activity	661839

W11R/D112E	Homo sapiens	the mutation changes the specificity for fucose transfer from H-type 1 to H-type 2 acceptors. Increased type 2 activity compared to mutant W111R	637646
W124A	Homo sapiens	alpha-1,4-activity is decreased to 20% of the wild type activity	661839
W124F	Homo sapiens	alpha-1,4-activity is decreased to 17% of the wild type activity	661839
W124R	Homo sapiens	undetectable alpha-1,4-activity	661839
W124V	Homo sapiens	undetectable alpha-1,4-activity	661839
W124Y	Homo sapiens	alpha-1,4-activity is decreased to 52% of the wild type activity	661839

Renatured/COMMENTARY ORGANISM LITERATURE

No entries in this field

APPLICATION	ORGANISM	COMMENTARY	LITERATURE
molecular biology	Homo sapiens	the stable system using the expression vector pIB/Vf-His-TOPO constitutes an advance for the large scale expression of glycosyltransferases and possibly other glycoproteins in insect cells	662484
synthesis	Homo sapiens	by constructing yeast cells that display human FUT6 on the cell wall by fusion of FUT6 with the yeast cell wall proteins Pir1 and Pir2, the fucosylated oligosaccharides can be easily synthesized by the incubation of yeast cells with an appropriate donor and acceptor. It will thus be possible to prepare a large amount of immobilized FUT6 fused with Pir proteins in an inexpensive medium lacking the serum that is required for mammalian cell cultivation	661803
synthesis	Homo sapiens	the soluble form of fucosyltransferase III secreted by stably transfected cells may be used for in vitro synthesis of the Lewis 1 determinant on carbohydrates and glycoproteins	637648

DISEASE TITLE OF PUBLICATION LINK TO PUBMED

No entries in this field

REF.	AUTHORS	TITLE	JOURNAL	VOL.	PAGES	YEAR	ORGANISM	LINK TO PUBMED	SOURCE
349717	Leiter, H.; Mucha, J.; Staudacher, E.; Grimm, R.; Glossl, J.; Altmann, F.	**Purification, cDNA cloning, and expression of GDP-L-Fuc:Asn-linked GlcNAc alpha1,3-fucosyltransferase from mung beans**	J. Biol. Chem.	274	21830-21839	1999	:	PubMed	FRENDA
349726	DeBose-Boyd, R.A.; Nyame, A.K.; Cummings, R.D.	**Schistosoma mansoni: characterization of an alpha 1-3 fucosyltransferase in adult parasites**	Exp. Parasitol.	82	1-10	1996	:	PubMed	FRENDA
489362	Karaivanova, V.; Mookerjea, S.; Hunt, D.; Nagpurkar, A.	**Characterization and purification of fucosyltransferases from the cytosol of rat colon**	Int. J. Biochem. Cell Biol.	28	165-174	1996	Rattus norvegicus	PubMed	BRENDA
637634	Wong, C.-H.; Dumas, D.P.; Ichikawa, Y.; Koseki, K.; Danishefsky, S.J.; Weston, B.W.; Lowe, J.B.	**Specificity, inhibition, and synthetic utility of a recombinant human alpha-1,3-fucosyltransferase**	J. Am. Chem. Soc.	114	7321-7322	1992	Homo sapiens	-	BRENDA

637635	Prieels, J.-P.; Monnom, D.; Dolmans, M.; Beyer, T.A.; Hill, R.L.	Co-purification of the Lewis blood group N-acetylglucosaminide alpha 1 goes to 4 fucosyltransferase and an N-acetylglucosaminide alpha 1 goes to 3 fucosyltransferase from human milk	J. Biol. Chem.	256	10456-10463	1981	Homo sapiens	PubMed	BRENDA
637636	Palma, A.S.; Vila-Verde, C.; Pires, A.S.; Fevereiro, P.S.; Costa, J.	A novel plant alpha4-fucosyltransferase (Vaccinium myrtillus L.) synthesises the Lewisa adhesion determinant	FEBS Lett.	499	235-238	2001	Homo sapiens, Vaccinium myrtillus	PubMed	BRENDA
637637	Sousa, V.L.; Costa, M.T.; Palma, A.S.; Enguita, F.; Costa, J.	Localization, purification and specificity of the full-length membrane-bound form of human recombinant alpha 1,3/4-fucosyltransferase from BHK-21B cells	Biochem. J.	357	803-810	2001	Homo sapiens	PubMed	BRENDA
637638	Rasko, D.A.; Wang, G.; Palcic, M.M.; Taylor, D.E.	Cloning and characterization of the alpha(1,3/4) fucosyltransferase of Helicobacter pylori	J. Biol. Chem.	275	4988-4994	2000	Helicobacter pylori	PubMed	BRENDA
637640	Legault, D.J.; Kelly, R.J.; Natsuka, Y.; Lowe, J.B.	Human alpha (1,3/1,4)-fucosyltransferases discriminate between different oligosaccharide acceptor substrates through a discrete peptide fragment	J. Biol. Chem.	270	20987-20996	1995	Homo sapiens	PubMed	BRENDA
637641	Holmes, E.H.; Yen, T.-Y.; Thomas, S.; Joshi, R.; Nguyen, A.; Long, T.; Gallet, F.; Maftah, A.; Julien, R.; Macher, B.A.	Human alpha1,3/4 fucosyltransferases. Characterization of highly conserved cysteine residues and N-linked glycosylation sites	J. Biol. Chem.	275	24237-24245	2000	Homo sapiens	PubMed	BRENDA
637642	Dupuy, F.; Germot, A.; Marenda, M.; Oriol, R.; Blancher, A.; Julien, R.; Maftah, A.	alpha1,4-Fucosyltransferase activity: a significant function in the primate lineage has appeared twice independently	Mol. Biol. Evol.	19	815-824	2002	Homo sapiens, Macaca mulatta	PubMed	BRENDA
637643	Morais, V.A.; Serpa, J.; Palma, A.S.; Costa, T.;	Expression and characterization of recombinant human	Biochem. J.	353	719-725	2001	Homo sapiens	PubMed	

	Maranga, L.; Costa, J.	alpha-3/4-fucosyltransferase III from Spodoptera frugiperda (Sf9) and Trichoplusia ni (Tn) cells using the baculovirus expression system							BRENDA
637644	Weston, B.W.; Nair, R.P.; Larsen, R.D.; Lowe, J.B.	Isolation of a novel human alpha (1,3) fucosyltransferase gene and molecular comparison to the human Lewis blood group alpha (1,3/1,4) fucosyltransferase gene. Syntenic, homologous, nonallelic genes encoding enzymes with distinct acceptor substrate specificities	J. Biol. Chem.	267	4152-4160	1992	Homo sapiens	PubMed	BRENDA
637645	Vo, L.; Lee, S.; Marcinko, M.C.; Holmes, E.H.; Macher, B.A.	Human alpha1,3/4-fucosyltransferases II. A single amino acid at the COOH terminus of FucT III and V alters their kinetic properties	J. Biol. Chem.	273	25250-25255	1998	Homo sapiens	PubMed	BRENDA
637646	Dupuy, F.; Petit, J.-M.; Mollicone, R.; Oriol, R.; Julien, R.; Maftah, A.	A single amino acid in the hypervariable stem domain of vertebrate alpha1,3/1,4-fucosyltransferases determines the type 1/type 2 transfer. Characterization of acceptor substrate specificity of the Lewis enzyme by site-directed mutagenesis	J. Biol. Chem.	274	12257-12262	1999	Homo sapiens	PubMed	BRENDA
637647	Chandrasekaran, E.V.; Chawda, R.; Rhodes, J.M.; Xia, J.; Piskorz, C.; Matta, K.L.	Human lung adenocarcinoma alpha1,3/4-L-fucosyltransferase displays two molecular forms, high substrate affinity for clustered sialyl LacNAc type 1 units as well as mucin core 2 sialyl LacNAc type 2 unit and novel alpha1,2-L-fucosylating activity	Glycobiology	11	353-363	2001	Homo sapiens	PubMed	BRENDA
637648	Costa, J.; Grabenhorst, E.; Nimtz, M.; Conradt, H.S.	Stable expression of the Golgi form and secretory variants of human fucosyltransferase	J. Biol. Chem.	272	11613-11621	1997	Homo sapiens	PubMed	BRENDA

		III from BHK-21 cells. Purification and characterization of an engineered truncated form from the culture medium							
637649	Costache, M.; Apoil, P.-A.; Cailleau, A.; Elmgren, A.; Larson, G.; Henry, S.; Blancher, A.; Iordachescu, D.; Oriol, R.; Mollicone, R.	Evolution of fucosyltransferase genes in vertebrates	J. Biol. Chem.	272	29721-29728	1997	Pan troglodytes	PubMed	BRENDA
637650	Oulmouden, A.; Wierinckx, A.; Petiti, J.-M.; Costache, M.; Palcic, M.M.; Mollicone, R.; Oriol, R.; Julien, R.	Molecular cloning and expression of a bovine alpha(1,3)-fucosyltransferase gene homologous to a putative ancestor gene of the human FUT3-FUT5-FUT6 cluster.	J. Biol. Chem.	272	8764-8773	1997	Bos taurus	PubMed	BRENDA
637651	Kukowska-Latallo, J.F.; Larsen, R.D.; Nair, R.P.; Lowe, J.B.	A cloned human cDNA determines expression of a mouse stage-specific embryonic antigen and the Lewis blood group alpha(1,3/1,4) fucosyltransferase.	Genes Dev.	4	1288-1303	1990	Homo sapiens	PubMed	BRENDA
637652	Cameron, H.S.; Szczepaniak, D.; Weston, B.W.	Expression of human chromosome 19p alpha(1,3)-fucosyltransferase genes in normal tissues. Alternative splicing, polyadenylation, and isoforms	J. Biol. Chem.	270	20112-20122	1995	Homo sapiens	PubMed	BRENDA
637653	Elmgren, A.; Rydberg, L.; Larson, G.	Genotypic heterogeneity among Lewis negative individuals	Biochem. Biophys. Res. Commun.	196	515-520	1993	Homo sapiens	PubMed	BRENDA
637654	Nishihara, S.; Yazawa, S.; Iwasaki, H.; Nakazato, M.; Kudo, T.; Ando, T.; Narimatsu, H.	alpha(1,3/1,4) fucosyltransferase (FucT-III) gene is inactivated by a single amino acid substitution in Lewis histo-blood type negative individuals	Biochem. Biophys. Res. Commun.	196	624-631	1993	Homo sapiens	PubMed	BRENDA
637655	Koda, Y.; Kimura, H.; mekada, E.	Analysis of Lewis fucosyltransferase genes from the human gastric mucosa of Lewis-positive and -negative individuals.	Blood	82	2915-2919	1993	Homo sapiens	PubMed	BRENDA

637656	Mollicone, R.; Reguigne, I.; kelly, R.J.; Fletcher, A.; Watt, J.; Chatfield, S.; Aziz, A.; Cameron, H.S.; Weston, B.W.; Lowe, J.B.; Oriol, R.	Molecular basis for Lewis alpha(1,3/1,4)-fucosyltransferase gene deficiency (FUT3) found in Lewis-negative Indonesian pedigrees	J. Biol. Chem.	269	20987-20994	1994	Homo sapiens	PubMed	BRENDA
637657	Nishihara, S.; Narimatsu, H.; Iwasaki, H.; yazawa, S.; Akamatsu, S.; Ando, T.; Sena, T.; Narimatsu, I.	Molecular genetic analysis of the human Lewis histo-blood group system	J. Biol. Chem.	269	29271-29278	1994	Homo sapiens	PubMed	BRENDA
637658	Elmgren, A.; Boerjeson, C.; Svensson, L.; Rydberg, L.; Larson, G.	DNA sequencing and screening for point mutations in the human Lewis ‚FUT' gene enables molecular genotyping of the human Lewis blood group system	Vox Sang.	70	97-103	1996	Homo sapiens	PubMed	BRENDA
637659	Elmgren, A.; Mollicone, R.; Costache, M.; Boerjeson, C.; Oriol, R.; Harrington, J.; Larson, G.	Significance of individual point mutations, T202C and C314T, in the human Lewis (FUT3) gene for expression of Lewis antigens by the human alpha (1,3/1,4)-fucosyltransferase, Fuc-TIII.	J. Biol. Chem.	272	21994-21998	1997	Homo sapiens	PubMed	BRENDA
637660	Pang, H.; Liu, Y.; Koda, Y.; Soejima, M.; Jia, J.; Schlaphoff, T.; du Toit, E.D.; Kimura, H.	Five novel missense mutations of the Lewis gene ‚FUT3' in African ‚Xhosa' and Caucasian populations in South Africa'	Hum. Genet.	102	675-680	1998	Homo sapiens	PubMed	BRENDA
646835	Farkas, V.; Sulova, Z.; Stratilova, E.; Hanna, R.; Maclachlan, G.	Cleavage of xyloglucan by nasturtium seed xyloglucanase and transglycosylation to xyloglucan subunit oligosaccharides	Arch. Biochem. Biophys.	298	365-370	1992	Pisum sativum	PubMed	BRENDA
660797	Niu, X.; Fan, X.; Sun, J.; Ting, P.; Narula, S.; Lundell, D.	Inhibition of fucosyltransferase VII by gallic acid and its derivatives	Arch. Biochem. Biophys.	425	51-57	2004	Homo sapiens	PubMed	BRENDA
661236	Sousa, V.L.; Brito, C.; Costa, J.	Deletion of the cytoplasmic domain of human alpha3/4 fucosyltransferase III causes the shift of the enzyme to	Biochim. Biophys. Acta	1675	95-104	2004	Mesocricetus auratus	PubMed	BRENDA

		early Golgi compartments							
661277	Stoykova, L.I.; Liu, A.; Scanlin, T.F.; Glick, M.C.	alpha1,3 Fucosyltransferases in cystic fibrosis airway epithelial cells	Biochimie	85	363-367	2003	Homo sapiens	-	BRENDA
661313	Palma, A.S.; Morais, V.A.; Coelho, A.V.; Costa, J.	Effect of the manganese ion on human alpha3/4 fucosyltransferase III activity	BioMetals	17	35-43	2004	Homo sapiens	PubMed	BRENDA
661341	Norris, A.J.; Whitelegge, J.P.; Strouse, M.J.; Faull, K.F.; Toyokuni, T.	Inhibition kinetics of carba- and C-fucosyl analogues of GDP-fucose against fucosyltransferase V: implication for the reaction mechanism	Bioorg. Med. Chem. Lett.	14	571-573	2004	Homo sapiens	PubMed	BRENDA
661433	Chandrasekaran, E.V.; Chawda, R.; Rhodes, J.M.; Locke, R.D.; Piskorz, C.F.; Matta, K.L.	The binding characteristics and utilization of Aleuria aurantia, Lens culinaris and few other lectins in the elucidation of fucosyltransferase activities resembling cloned FT VI and apparently unique to colon cancer cells	Carbohydr. Res.	338	887-901	2003	Homo sapiens	PubMed	BRENDA
661803	Abe, H.; Ohba, M.; Shimma, Y.-I.; Jigami, Y.	Yeast cells harboring human alpha-1,3-fucosyltransferase at the cell surface engineered using Pir, a cell wall-anchored protein	FEMS Yeast Res.	4	417-425	2004	Homo sapiens	PubMed	BRENDA
661839	Dupuy, F.; Germot, A.; Julien, R.; Maftah, A.	Structure/function study of Lewis alpha3- and alpha3/4-fucosyltransferases: the alpha1,4 fucosylation requires an aromatic residue in the acceptor-binding domain	Glycobiology	14	347-356	2004	Homo sapiens, Gorilla gorilla, Pongo pygmaeus, Hylobates lar	PubMed	BRENDA
661845	Leonard, R.; Lhemould, S.; Carlue, M.; Fleurat, P.; Maftah, A.; Costa, G.	Biochemical characterization of Silene alba alpha4-fucosyltransferase and Lewis a products	Glycoconj. J.	22	71-78	2005	Silene alba	PubMed	BRENDA
662137	Ma, B.; Wang, G.; Palcic, M.M.; Hazes, B.; Taylor, D.E.	C-terminal amino acids of Helicobacter pylori alpha1,3/4	J. Biol. Chem.	278	21893-21900	2003	Helicobacter pylori	PubMed	BRENDA

		fucosyltransferases determine type I and type II transfer							
662484	Morais, V.A.; Costa, J.	Stable expression of recombinant human alpha3/4 fucosyltransferase III in Spodoptera frugiperda Sf9 cells	J. Biotechnol.	106	69-75	2003	Homo sapiens	PubMed	BRENDA

LINKS TO OTHER DATABASES (specific for EC-Number 2.4.1.65)

ExPASy

KEGG

NCBI: PubMed, Protein, Nucleotide, Structure, Genome, OMIM, Domains

IUBMB Enzyme Nomenclature

PDB database(3D structure)

PROSITE Database of protein families and domains

SYSTERS

Protein Mutant Database

Structural Classification of Proteins (SCOP)

Protein Structure Classification (CATH)

InterPro (database of protein families, domains and functional sites)